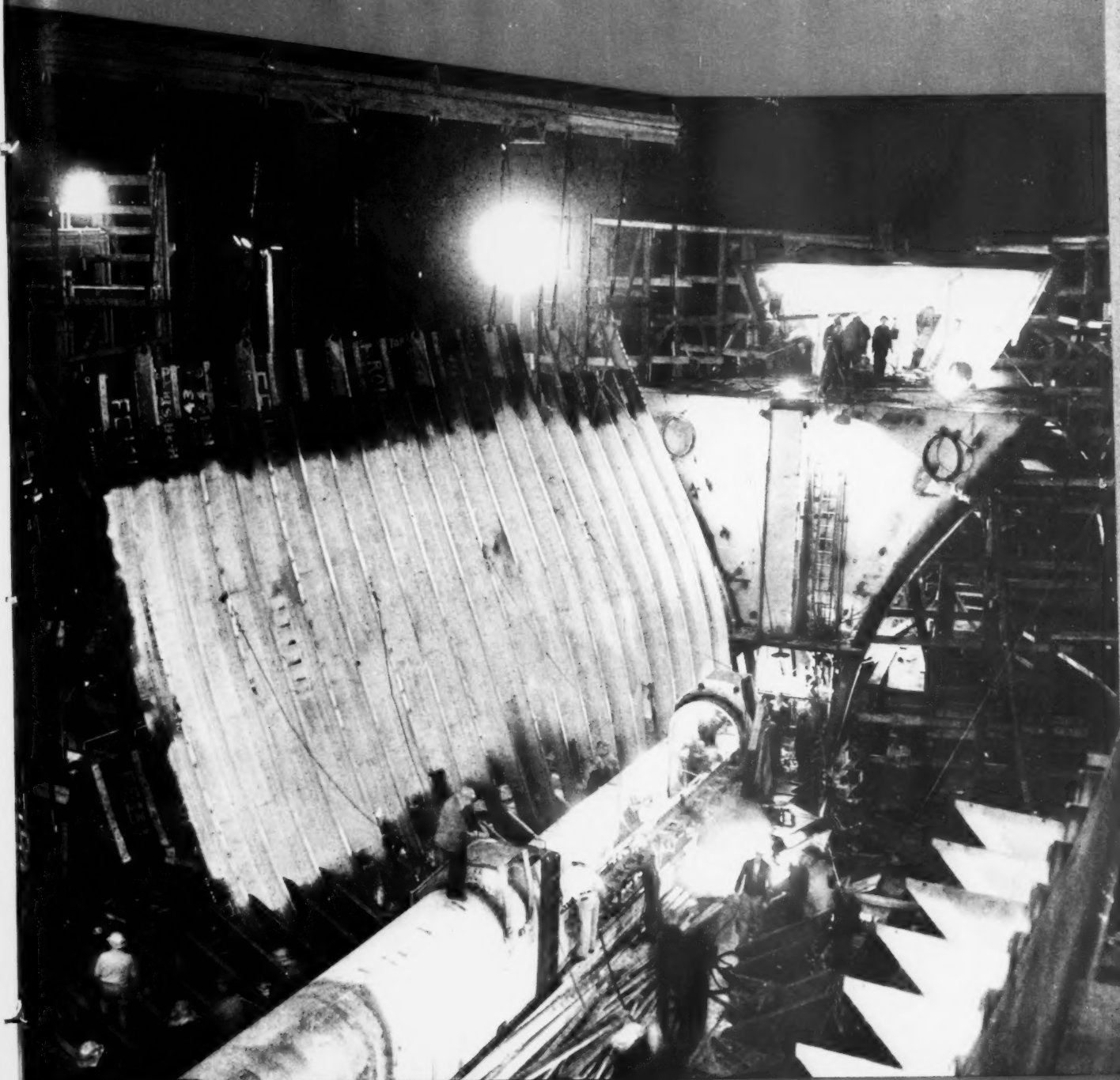


VOLUME VII

NO. 12

# WESTERN INDUSTRY



Twenty-Five Cents

December, 1942

# *Copper and Copper Alloys* **are scarce...**

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## EDITORIAL COMMENT

(Communications on any subject of interest to our readers are welcomed. If author wishes, his name will not be used. Unsigned contributions will be disregarded.)

### Dumped in Our Lap

POST-WAR planning already has had its first major job thrust upon it for immediate action, as a result of the American occupation of North Africa. The task is that of feeding civilian populations as they come under United Nations control. Events in North Africa are an urgent reminder that our plans and preparations for war have proceeded so rapidly that similar thought for the conditions of peace-time living must be taken without delay, lest we suffer from unpreparedness.

Arnold Kruckman's Washington news letter in this issue calls attention in striking fashion to what we are facing, and to the necessity of some Western planning for the future along agricultural as well as industrial lines. Land will have to be put under irrigation and additional reclamation projects undertaken, and unless the West makes these needs thoroughly known in Washington, some economic Pearl Harbors and Bataans will follow.

In our preoccupation with the industrial development that the war has brought to the West, it is easy to overlook the fact that adequate production and distribution of food will be the first concern of this country for a considerable period. Because conditions in North Africa are good in comparison to continental Europe, we will not have to dip very far into our surplus wheat to take care of Algeria, Morocco, Tunisia and Tripoli, but the invasion of Italy is not far away and inevitably we will also have to feed Spain in a short time, just as soon as the Nazi pressure on that starving country relaxes. And next after that comes the relief of harried France.

Surely it is time for post-war planners to get into high gear. *Western Industry* offered in the last issue to act as a clearinghouse for information between Western groups and organizations, and this offer of service is a permanent one.

### Let's Ask Ourselves

WHEN we feel critical about the government's reluctance to handle that hot potato known as the war manpower problem, everyone will do well to realize how long it has taken each one of us to really adapt himself individually to the necessities of war. We may have accepted rationing and various other inconveniences with good grace, but it is a long jump from these trifles to closing up our offices, stores or shops to go into strange work, perhaps leaving our homes for far distant places. Are we ready to say, as did one well-known writer nearly two thousand years ago "... and having done all, to stand"?

### Plastics and Plywood

PLASTICS and plywood are two names that are being bandied around pretty freely these days in the newspapers and the industrial press, with the result that misapprehensions frequently arise. One of our readers, George Pampel, advertising manager of I. F. Laucks, Inc. of Seattle, calls attention to an item in our September issue with the following comment:

"We note with a great deal of dismay that 'Western Industry' in its issue of September 1942 is still using the erroneous term 'plastic plane' for what is merely a wood and glue plane.

"On page 7 you refer to the plastic plane in your story of the PT-25, and as the story is developed I think that you are actually giving more circulation to the erroneous idea that these planes are plastic molder jobs like a telephone receiver, rather than wood and modern glue constructed planes."

# WESTERN INDUSTRY

News, Methods, Solutions to Problems of the Principal Manufacturing and Processing Industries of the West

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### OUR COVER PICTURE

Just 7 days and 14½ hours after the keel of the 10,500-ton Liberty freighter Robert E. Peary was laid at Richmond (California) Shipyard No. 1, the boat was completed and delivered. The picture, taken 26 hours after keel-laying, shows placement of stern sector shell assembly, with shaft alley and after-peak section in place.



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# Spotlight

## on the NEWS

**WESTERN INDUSTRY**  
**FOR DECEMBER, 1942**

VOLUME VII

NUMBER 12

### **Oregon Gets Brand New City, Second Largest In State, For Kaiser Workers**

**O**REGON'S second largest city, built from scratch in 4½ months, got its first 500 inhabitants on Dec. 1 and by the end of next month will house 40,000 people, 10,000 more than the state capital, Salem. Its official name is Vanport.

Currently known as Kaiserville, and located between the Portland city limits and the Columbia River, it will house workers in the three Kaiser shipyards at Swan Island, Vancouver, and St. Johns. At present there are 70,000. The project is composed of two-story frame apartments, requiring 42,000,000 board feet of lumber, and will have seven miles of paved streets, 107 equipped playgrounds and two big community halls.

Before spring, more than 100,000 workers will be building Liberty ships in the Vancouver-Portland area when the three yards are fully manned. At present there are 70,000, 6,800 of whom are women.

Stabilization of labor, through an agreement with the metal trades unions, has cut down labor turnover, which formerly ran as high as 19 per cent. Incidentally, the Kaiser management is under attack from the CIO, who have filed a complaint with the National Labor Relations Board that the Kaiser Company, Inc., and the Oregon Shipbuilding Corporation engaged in unfair practices by helping 16 AFL labor unions recruit members, signing AFL contracts when there were only a few employees at work.

The Los Angeles area also is witnessing important steps in providing housing facilities. Last month Wilmington Hall, housing 3,000 shipyard workers, was opened. It consists of 69 buildings, with community center, cafeteria and gymnasium-auditorium, located within walking distance of the California, Bethlehem and Consolidated shipyards.

Decentralization of labor, on the other hand, is being attempted by Consolidated Aircraft Corporation, because San Diego's

housing facilities are overtaxed. The city's population has grown from 203,000 in 1940 to 340,000 at the present time, but migration has practically ceased on account of the housing situation, and Consolidated's increasing output has not been matched by growth in labor supply.

Consequently Consolidated is opening small parts plants in 12 California communities. Two of these sub-assembly plants will be in Santa Ana, where small electrical parts and upholstery will be fabricated.

"By going into towns not already occupied to the limit, we can insure a steady flow of small parts to the main plant," stated Harry Woodhead, president.

### **Seasonal Lag Overcome**

Increased employment in the durable goods industries in California in October was so great that the tailing off of the canning season only left a net decline in total factory employment for the month of 1,000 from the September level. The total payroll for October included 752,000 persons and the weekly wage bill was \$35,000,000, an increase of 88 per cent over a year ago. Average earnings were \$1.07 an hour.

### **Develop More Air Cargo**

Air Cargo Research Association has been organized at Los Angeles to prepare both aircraft builders and the American shipping industry for global air transport. Preliminary studies have indicated that 33 per cent of air cargo space is now wasted through failure to adapt general loading and packaging principles to air transportation needs.

Thomas E. Wolfe, vice-president of traffic for Western Air Lines, is general chairman of the organization. Committees set up and chairmen named are: statistics

and research, Ralph E. Oursler, industrial research department, Lockheed; container and package specifications, Robert Welliver, loading engineer, Douglas; engineering and transportation, Robert Reedy, chief of preliminary design engineering, Vega; organization, Kenneth L. Vore, assistant traffic manager, Vultee; public relations, Glen B. Eastburn, manager aviation department, Los Angeles Chamber of Commerce.

### **Rubber From Wood Scrap**

Studies to determine the feasibility of using scrap wood from the lumber industry of the Pacific Northwest for the manufacture of industrial alcohol and synthetic rubber have been instituted in two University of Washington laboratories, with possible development of ten to 20 million gallons of alcohol a year.

One experiment, under the direction of Dr. J. L. McCarthy of the chemical engi-

• One last grin before he leaves the Joshua Hendy Iron Works' scrap heap to be reincarnated as part of an engine casting — or maybe a flywheel.



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# Spotlight on the NEWS

neering department, will deal with methods of converting wood-pulp liquors into alcohol for use in synthetic rubber.

The other laboratory work is being conducted by Professors Bror Grondal and Harry Schrader of forestry for a portable pulpwood cutter which will expedite conversion of waste wood into the necessary form for pulp mills.

## Colorado Stimulates Mines

Colorado Mining Association has begun drafting plans to stimulate strategic metals production in Colorado mines. The association and mining groups are preparing to request that the government institute stockpile purchase setups so that small mines will be able to transport their ore to central locations and receive payment immediately. This would also expedite shipments.

## Nevada Finds Iron Ore

Further development of an extensive iron ore deposit in the Fallon area is planned by Lewis-Yorston Iron & Steel Co. Present plans include erection of a furnace capable of producing 150 tons of pig iron daily, with coke to be used for fuel. Yorston estimates that the deposit contains more than 34,000,000 tons of commercial iron ore, much of it being of Bessemer grade.

## An Industry Starts West

Acquisition by the Joshua Hendy Iron Works of Sunnyvale, California, of the Crocker Wheeler Electrical Manufacturing Co. with its large manufacturing plant in New Jersey will bring west of the Mississippi for the first time the large-scale manufacture of electrical equipment, particularly direct current apparatus.

After ratification of the purchase arrangements by Crocker-Wheeler stockholders on December 14, plans for combined operation will be set in motion providing for the manufacture of electrical apparatus at Sunnyvale, and also for expansion of both this plant and the one at Ampere.

In addition to articles of war manufactured by Crocker-Wheeler Company, their standard products include polyphase induction motors, synchronous motors, direct current motors, alternating current gener-

ators, direct current generators and motor generator sets.

Charles E. Moore, president of Joshua Hendy Iron Works, states that the proposed purchase would not change Crocker-Wheeler's production of electric motors and other products, and that the management and employees of the New Jersey concern's plants would remain intact. Executive control, however, will be centered at Joshua Hendy's general offices in Sunnyvale.

## Oregon Leads In Scrap

Oregon was the first state to reach its scrap metal quota, according to Claude I. Sersanous, chairman of the state salvage committee. Its mark of 100,000 tons was passed early in November and by the middle of the month the total was 110,834 tons, an average of 203.3 pounds per capita.

## Shatter Ship Record

Another time record for shipbuilding was shattered in the Vancouver yards of Henry J. Kaiser when, within two days and 23½ hours after the laying of its keel, the hull of a trim, sleek tank carrier was launched November 15. No great furor attended the launching of the new craft in spite of the notably short time spent in its creation. Vice President Edgar Kaiser said that the Vancouver plant would be turning out 20 Liberty ships a month, if the yard had not been converted for the construction of other types of vessels.

## Drill For Dry Ice Plants

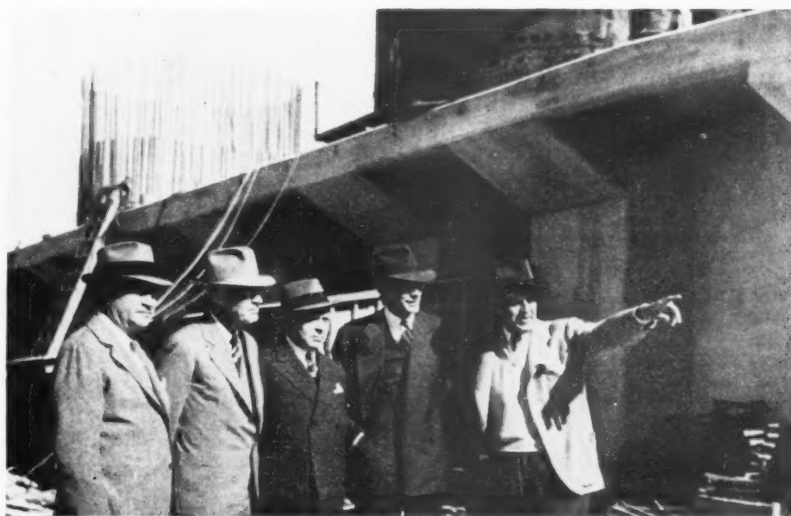
Dry ice to maintain the intense refrigeration necessary in developing butyl rubber is one of the needs to be supplied by three 100-ton dry ice plants to be built by the National Carbonic Products Co., Inc. Eighty new wells are to be drilled in the Imperial Valley of California, and the entire development program totals \$1,500,000. L. H. Polderman is president of the company and George Pepperdine, head of the Pepperdine Foundation, is associated with him. Dry ice also is to be used for refrigeration and air cooling on ships.

## N. W. Aluminum Potential

Commenting upon the aluminum situation in Washington State, following a recent conference in Washington, D.C., with government and private-business officials, Dr. Nathanael H. Engles, director of the University of Washington bureau of business research, said Washington State has 40 per cent of the nation's natural capacity for aluminum production. It is yielding more than twice as much of the metal as did the entire nation before the war, he declared.

The university's bureau is engaged in an economic and field survey of all the light-metal industries in the world in order to establish a pattern for the survey made in Washington State, the doctor said. The survey, he said, will give consideration to potential sites and development of aluminum and magnesium plants in the state, along with their possible permanence after the war.

• Brass hats in steel at the new \$150,000,000 Provo, Utah, steel plant. From left: Benjamin Fairless, pres., B. H. Lawrence, vice pres. in charge of engineering, U. S. Steel; W. A. Ross, pres., Columbia Steel; A. J. Hulse, chief engineer, E. M. Barber, vice pres., Defense Plant Corporation Division, Columbia Steel.





# MANPOWER—Coast Mobilization Plan

**Labor Inventory of Essential War Industries to Enable Draft Boards  
To Pick More Intelligently. Job Stabilization Structure Outlined**

**A**N OVERALL mobilization plan intended to systematize the whole manpower situation for essential war industries in the three Pacific Coast states, Arizona and Nevada, has been set up by agreement between management and labor groups in those industries. The program is expected to accomplish the following results.

1. Provide a complete labor inventory of all industries affected.
2. Enable the draft boards to make use of this inventory so that workers will be withdrawn for selective service in orderly fashion without upsetting industrial operations.
3. Furnish an overall structure for job stabilization plans which will be agreed upon by the various industries.

The plan has received unanimous approval of management and labor committees throughout the five states mentioned, and received final approval of the Regional Management-Labor Policy Committee of the War Manpower Commission at a meeting in San Francisco November 18. Members of this regional committee are:

Management: E. R. Hinton, president, Olympic Steel Works, Seattle; J. H. Kindelberger, president, North American Aviation Corp., Inglewood; William Darsie, Walnut Grove, representing agriculture; Joseph A. Moore, chairman of board, Moore Drydock Corp., Oakland. Labor: C. J. Haggerty, president, California State Federation of Labor; Phillip Connelly, president, California State CIO; James E. Taylor, president, Washington State Federation of Labor; Frank E. Gordon, CIO.

War manpower has profited by the mistake of WPB in spending two years trying to govern demand for materials through the priorities system instead of focusing its attention on supply. WPB has finally gotten what appears to be the answer to its problem in the Controlled Materials Plan, and the WMC labor mobilization plan seems to parallel it, by finding out first of all what the availability of manpower is in each industrial area.

Accordingly, surveys have been started in designated essential war industries to ascertain just what the labor supply is. These will be carried on under the direction of W. K. Hopkins Regional Director of WMC and the area directors, who are: Stanley V. White, San Francisco; H. R. Harnish, Los Angeles; Lee Stoll, Portland; Gen. H. G. Winsor, Seattle; Henry K. Arneson, Phoenix; William E. Royle, Reno.

All manufacturers of any size will be called on to furnish an inventory of their employees, broken down into classifications.

This is expected to provide a statistical summary that will enable draft boards to take men on a more intelligent basis, instead of having to work in the dark with disastrous results to many employers who have had their operations crippled. It will give employers a reasonable time for the training and recruitment of replacements.

The regional War Manpower office, with the cooperation of the various government agencies, will set up lists in each area showing relative importance of each industry to the war effort.

The Department of Agriculture is called upon to provide information concerning relative importance of crops, acreage and locations in order that the War Manpower Commission may anticipate labor requirements.

On the basis of such information, WMC in each area immediately can take practical steps to meet urgent labor requirements.

Mr. Hopkins hopes that it will also be a successful voluntary stabilization plan that will obviate the necessity of compulsory legislation. He said it should not be interpreted as freezing all workers on their jobs for the duration, but that workers in vital industries should stay on their jobs and cooperate to the fullest extent in supporting the stabilization plans which are to be agreed upon by their representatives.

Freezing of labor in the lumber and mining industries of the West was instituted by WMC to prevent draining of men to the shipyards, and this plan is an effort to cover all other essential industries by voluntary methods.

## RESOURCES— Western Supply Inventory

**Economic Audit Is Prepared of Raw Materials, Markets,  
Industries and Plant Factors Affecting Development**

By **GEORGE W. MALONE**  
Managing Director,  
Industrial West Foundation

**A**N INVENTORY of the resources of the Western Economic Empire, prepared by the Industrial West Foundation, will be ready for distribution in January, 1943. It will include the eleven Western States, Alaska, Hawaii and the Philippines.

The work includes a thorough "Economic Audit" of the raw materials, markets, industries, and plant factors affecting industrial feasibility in the region. Special attention is given to the strategic and critical minerals and materials in the agricultural, mineral, forestry, fishing, and fuel fields where increased production will find a ready market.

The greatest service that the Western states can render war production is the development of their own resources, since it just happens that they are peculiarly equipped to produce many of the products in which this nation's markets are now deficient.

Pearl Harbor and its immediate effect of cutting off our supplies of rubber, tin, chromite, manganese, tungsten, hemp and many other raw materials, without which it is impossible to fight a war or live in peace, taught us once and for all the fallacy of a national economy which has allowed this country to become dependent upon more than 30 countries, widely scattered throughout the world, for such minerals and materials.

War necessity is proving what Westerners have long contended, that this nation can produce, through adjusted unit prices, the so-called strategic and critical minerals and materials, maintaining our standard of living as against the low cost Asiatic and European exploited labor, without undue effect on the cost of the finished product.

Starting with the available raw materials and low-cost power coming as a by-product of the irrigation and flood control projects, industry "begets" industry. For example, with the necessary manganese, chromite and tungsten being produced in the area, the next natural industry is the ferro-manganese and the ferro-chromium plants, followed by the steel furnaces in

the vicinity of the iron ore, such as Colorado, Utah and California. With the steel available, the next logical development is the necessary fabricating plants, making up a complete economic production unit.

Aluminum and magnesium production lead to new and enlarged fabricating and manufacturing plants. It all has to start at the grass roots, and the market for the low-cost power from the water conservation and flood control projects is to be found in processing the mineral and forestry raw materials.

There is always a lag in industrial development, due to the reluctance of established investments to expand when the markets can be controlled from the existing plants, even when developments have made construction in new areas feasible. Western markets have expanded, and access to foreign markets through the Pacific Coast gateway has improved through extended transportation systems.

Increased production is a question of unit cost, adjusted to pay American wages and the necessary additional processing cost. For example, when the Japs hit Pearl Harbor and cut off all imports from that

area, we were producing less than 5 per cent of the manganese, 1 per cent of the chromite, and 50 per cent of the tungsten used in peacetime pursuits, and the war program has more than doubled our estimated consumption. We have been slow in adjusting unit prices to American costs of production.

Tremendous strides are being made in the production of lighter, stronger construction materials, including the aluminum, magnesium and steel alloys, automatically making obsolete most of the moving transportation equipment. There will be an enormous field of replacement following the war, which means a real peacetime job for the Western wartime plants.

National policy in regard to domestic production and foreign imports will determine whether the West will continue to grow in industrial importance following the war, or drop back in the role of a raw material producing area. It can *double* in population in the next two decades or lose what it has already gained. From a national safety standpoint alone, this nation should

never again be allowed to become absolutely dependent upon foreign nations for the materials necessary to maintain our independence and freedom. To influence such policies, cooperation is necessary.

To facilitate such cooperation the inventory of our resources has been made through an industrial survey, the results of which will be made available through an industrial service by the industrial West Foundation, a non-profit fact-finding organization. Approximately \$350,000 has been expended in the work, made available through states, public utilities, business organizations and individuals.

Each section of the work has been edited by an outstanding nationally known authority in the respective field, and the state engineers, directors of the state bureaus of mines, mining schools, agricultural extension directors and planning boards have acted as consultants and advisors, furnishing valuable data and information.

The industrial service includes the Industrial Report, which is in effect an Encyclopedia of the resources of the region together with periodic supplements keeping the work current.

---

• Operation of the blast furnace at the Kaiser steel mill at Fontana, California, will begin late this month, turning out pig iron and steel plate for the Kaiser shipyards will be rolled next spring. Capacity of the plant is 675,000 tons of steel a year. Besides the blast furnace, equipment includes six open hearths, 90 coking ovens, plate mill, bar mill, structural mill and alloy finishing facilities. The structural and bar mill will be completed late in 1943.





• Carders in the foreground inspecting reclaimed waste which has been laundered by a steam process to remove oil and foreign matter. The oil also is used again.

## SALVAGE? —Ask Pacific Fruit Express

**W**EST COAST industrial firms on the lookout for new management and operating short-cuts that will reduce costs and save man-hours, are discovering that a company-wide "industrial scrap drive" is a life-saver in wartime operations.

In these times of materials shortages, both management and workers are finding out that obsolete equipment and materials, waste end-bits, filings and other plant by-products, all fit into the economy pattern so essential to the nation's war program.

The War Production Board's Conservation Division is bearing down heavily on the need for a nation-wide setup of "salvage managers" and "salvage programs" to be launched in every manufacturing plant, factory, mill and machine-shop. This comes under the direction of the Regional WPB's Industrial Salvage Section, which is available for advice and cooperation in organizing such a program in all West Coast plants.

An outstanding example of an efficiently operated salvage drive program is that of the Pacific Fruit Express, whose special field is railway refrigeration car service, with headquarters at Roseville, California.

A recent step-up in the P.F.E. salvage

program followed the showing of the War Production Board's sound film, "Let's Get in the Scrap," which highlights the advantages of an organized conservation and scrap collection campaign. This was shown to an audience which included all the company's department heads, foremen and lead workmen.

The Pacific Fruit Express salvage operations were inspected recently by regional WPB officials who stated that the plant is doing one of California's best jobs of salvage and reclamation for war production purposes.

Many of the technical details of the company's program cover special treatment of equipment and tools to secure maximum efficiency and longer life-periods for these critical production aides.

A review of some of the more important factors in the P.F.E. salvage and conservation program reveals methods of handling operating activities that are applicable to many other plants, and should be of vital interest to production executives.

For example, all foremen are required to produce the broken or worn part before new parts are issued, unless written authorization is available in special cases.

This contributes to the general salvage pick-up program, in which the company's average scrap pile each month totals more than 250 tons of critical metals.

One of the methodical salvage operations includes reclamation of materials from dismantled cars, performed on the spot by men trained in sorting essential materials. Specially designed bins are placed at intervals on either side of the car, marked for certain metals available for scrapping or reuse. These bins are emptied at a designated location each day, which means a continuous routine of scrap disposal and reclaimed metals in a single handling of materials.

Another important development which has slashed time and cost in handling equipment is the decontamination of refrigerator cars used for shipments of fish, hides for tanning, and similar commodities. Previous methods called for complete renovation of the car by removing and discarding floors and walls to a three-foot height, thus tying up the equipment from 10 days to three weeks.

The new method calls for a special steam cleaning treatment which deodorizes the rolling unit in less than 24 hours, and reduces the cost from approximately \$125 to



\$8, with a greatly increased operating period for each car.

Other P.F.E. conservation activities have a direct bearing on machine shop operations, improved methods of reclaiming and maintaining tools and equipment units, and similar operating developments.

For instance, all reamers are now ground down in size in two operations—first, a 15/16 reamer is down to 13/16 and then to 11/16.

All shanks are drawn down from rivet sets for making punches and chisels. Shear blades are reground for reuse. Punch and die consumption is cut down 90 per cent by careful alignment, and every care is taken to prevent the punch from entering the die. All punches and dies are reground and reset at given periods.

Long life is the conservation objective for the plant's rubber supply of air and water hose, which is reclaimed and reused by a unique method of splicing and testing. This involves a machine especially designed in the company's shops, using stay-put splices. The hose for water and air uses is reclaimed from one-foot lengths, and the tests for water-hose is 100 lbs. pressure; for air hose to 150 lbs., and train line hose to 200 lbs. maximum pressure.

The train line hose is reclaimed by a method using rubber cement applied to the inside of the hose under extreme pressure. This completely reseals the inside lining of the hose. By experimental tests this makes the hose almost puncture proof. One piece of hose so reclaimed and treated was put into a train line and used for several months after jabbing with an ice pick.

To round out the program, here is a running series of Pacific Fruit Express shortcuts and conservation methods worthy of study by plant operators:

Machine punches are reclaimed and reground. New punches will usually last for about 100,000 holes while the same punch after reclaiming and regrinding can be used to punch from 400,000 to 1,000,000 holes. Center sill cover plates are salvaged from dismantled cars, reclaimed and the material used, by means of a specially designed drop forging machine, for making and reinforcing beams for refrigerator cars.

All upholstering and hatchway canvasses are reclaimed, thoroughly cleaned, and reused several times. All upholstery nails are reclaimed, rattled and packed for reuse. Sponge rubber gaskets, used for sealing hatchways and doors, are reclaimed and made better than new by a special process of caustic soda.

By an improved process of reclaiming journal waste, using a specially designed press and washing machines, the waste is made as good as new. All floor and side insulation is reclaimed and reused. Pieces that cannot be reused are returned to the manufacturer for credit and reclamation.

Journal oil is reclaimed and refined for

use as fuel oil. Journal lids are reclaimed by cutting off the worn ears and replacing with shop-made ears by electric welding process. By this method it is possible to reclaim and reuse about 90 per cent of the lids which have in the past been scrapped.

Center device links are drawn down for making ends of brake rods. Car jacks are completely reclaimed and rebuilt at a cost of less than 50 per cent of new price and the material outwears the new material. All bushings and dies are reclaimed and reused. All sledge hammer heads are re-forged and retempered.

In summarizing the extensive company-wide salvage and conservation program carried out by the Pacific Fruit Express, credit for the operating policy and proce-

dures goes to the key plant executives in charge, headed by E. R. Hamilton, superintendent, and including: W. B. Abell, district store keeper; R. F. Nelson, general foreman; F. J. Kuhlman, chief clerk; J. A. Osella (foreman), lead machinist, and many others.

The regional offices of the War Production Board's Conservation Division have also paid tribute to the Pacific Fruit Express salvage program as an excellent model.

The Northern California firm comes under the operating contracts of the WPB's Industrial Salvage Section, in San Francisco, with A. H. Richards, Regional Chief, and Paul Skinner, District Manager, and Edward L. Hughes, Field Representative in the Sacramento area.

• The circus barker who shouted "Bosco, the living wonder! Snakes, he eats 'em alive," had nothing on this big press, largest of its kind west of Chicago, installed in an Oakland scrap yard. Here we see it taking a whole jalopy at one gulp, to chew it into a compact mass.



• Railroads and car companies save all of the axle except its squeak. Here is a display of some of the 50-odd items that Southern Pacific makes out of old car axles. You couldn't beat that record in Scotland.



# Wear and Tear—And Ways to Meet It

**Welding, Hard Facing, Metal Coating, Hard Chrome Plating and Regrinding All Offer Opportunities For Reclaiming and Renewing Worn Equipment Parts Thus Overcoming Difficulty of Getting Replacements and Avoiding Shut-downs**

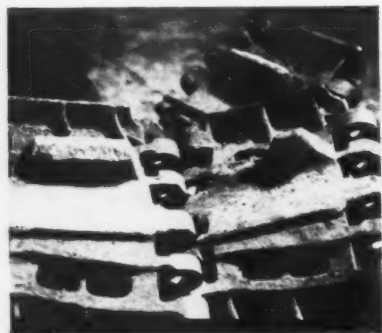
**F**OUR methods of reclaiming and renewing worn automotive parts—metal spray, welding, hard facing and chromium plating—were discussed before the West Coast Transportation and Maintenance Conference of the Society of Automotive Engineer recently by Ellis W. Templin, automotive engineer for the General Plant Division, Los Angeles Bureau of Power and Light.

Points brought out by him include the following:

## Welding

Many parts have been successfully reclaimed and renewed by welding processes. Oxyacetylene welding and cutting outfits are so inexpensive and useful that every fleet operating its own shop, small or large, will find the cost a worth-while investment. Alternating current electric arc welding sets should earn their cost in any fleet shop with over ten vehicles.

Warpage due to welding can be controlled or reduced by a number of different methods. Peening of welds can be done in order to dissipate welding stresses and if properly applied can overcome severe warpage.



—Courtesy Peerless Welding Co.  
• Broken-off track pad for power shovel is efficiently replaced by means of welding

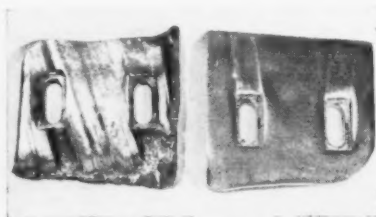
It is possible to produce sound, strong joints in metals without actually melting the base metal. A properly made brazed joint in mild steel is quite comparable to a true fusion weld.

Causes of weld failure include the following: improper welding rod for the work; improper size of welding rod; improper preparation of welding joint (bevel too narrow or not spaced properly, or work not thoroughly cleaned); insufficient preheating, excessive preheating, incomplete

slag removal, overheating the weld area, excessive weld metal, oversized tack welds.

## Hard Facing

Hard facing is the process of welding on to wearing parts a coating edge or point of a metal highly capable of resisting abrasion or wear. In other words, a metal surface, which due to its use is normally worn away rapidly, is protected by a layer of



—Courtesy The Stoddy Company  
• Brick plant Muller plows; (1) unprotected, 30 hrs. service. (r) Hard-faced, 300 hrs.

special alloy which possesses exceptional resistance to abrasion and wear. The process can be applied equally well to new parts before their first use or to old, worn parts. Experience has shown hard facing to be an easy and economical method for keeping equipment on the job without losing time excessively for repair or replacement of worn parts.

The economies of hard facing may be summarized as follows:

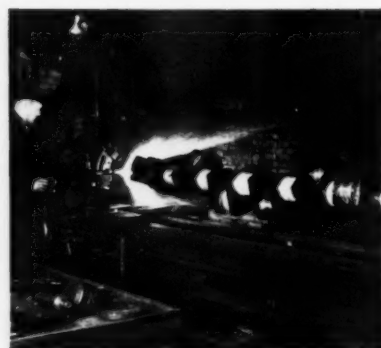
1. Longer life of equipment.
2. Fewer replacements with resultant savings in labor charges and lost operating time.
3. Utilization of cheaper base metal for wearing parts.
4. Renewal or reclaiming of worn parts.

## Metal Coating

Molten metal spray coatings do not fuse to the surface, but depend for their bond on the high velocity of the minute particles which are driven on to the surface by high pressure air, and by the roughness of the prepared surface. The density of the metal itself, also depends on this high velocity of the projected molten particles. Sprayed metal has a very high compressive strength but it has comparatively little strength in tension or torsion. The resultant coating becomes like a bushing keyed to the surface with thousands of minute keyways.

Advantages: (1) sprayed metal, either ferrous or non-ferrous, makes a much more

efficient bearing surface than the solid metal due largely to its porous nature. (2) When applied for corrosion resistance any thickness desired may be applied as opposed to plating which is limited. (3) In many cases defects in castings can be repaired by metal spray. (4) Worn or scored bearings or shafts of any size, worn pistons, undersize parts and similar work can readily be repaired and made as good as or better than new by metal coating. (5) A striking example of the economical use of metal coating is that of salvaging worn bronze bushings by first squeezing them through a die to make the bore machinable to desired size and then spraying on the outer diameter and finishing to size.

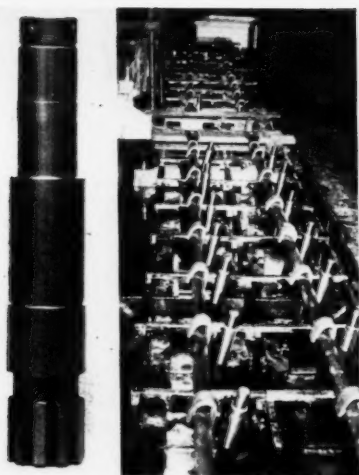


—Courtesy Precision Engineering Co.  
• Metal coating. Part at the right already sprayed, gun is continuing spray to left

## Hard Chrome Plating

Hard chromium plating for wear or abrasion resistance is applied directly to the base metal. The thickness of hard deposits varies from .0003" to .500" but should be at least .003" for heavy service. At the upper end from .010" to .050" is the field of building up of worn or undersize parts. Deposits greater than .001" must be finish ground or lapped to size. Since finish grinding is required the parts must be ground undersize before plating, plated oversize, and then finish ground or lapped to size.

Experience has shown that a thickness of .003" will give satisfactory service as a wear or abrasion resisting coating in most applications. In cases where the deposit must also withstand corrosion, this thickness is insufficient because of the microscopic cracks present in chromium plating. For corrosion plus wear resistance, at least double the normal thickness of .003" must be applied. To chrome plate a part for



—Courtesy California Industrial Plating Co. and Hard Chrome Engineering Co.

- **Hard chrome plating.** (Left) Diesel engine vertical drive shaft after plating. (Right) Oil well valve stems in plating tanks

wear resistance it should be ground .006" undersize on the diameter, plated .006" oversize on the diameter (thickness .006") .003" thickness of plating is necessary for the finishing operation.

Examples of successful hard chrome plating include brake drums for a heavy bus that gave 220,000 miles of service, although the original surface showed wear after 80,000 miles. The driver was not ad-



—Courtesy Precision Bearings, Inc.

- **Regrounding of ball bearings also saves materials.** Inspection scene shown above

vised of the plating of the drums and did not report any difference in operation of the brakes. Cummins diesel camshafts gave more than five times the mileage after hard chrome plating than the original camshafts.

#### RISING TIDE OF FEMININITY

Do women want jobs? Ask the San Francisco-Oakland Bay Bridge Toll Authority. They advertised for toll collectors, male or female, and for two days it took the entire time of two telephone operators answering calls. The chief engineer had to send a messenger somewhere else to take care of an outgoing business telephone call for himself. Jobs pay \$175 a month, and 15 women were hired.

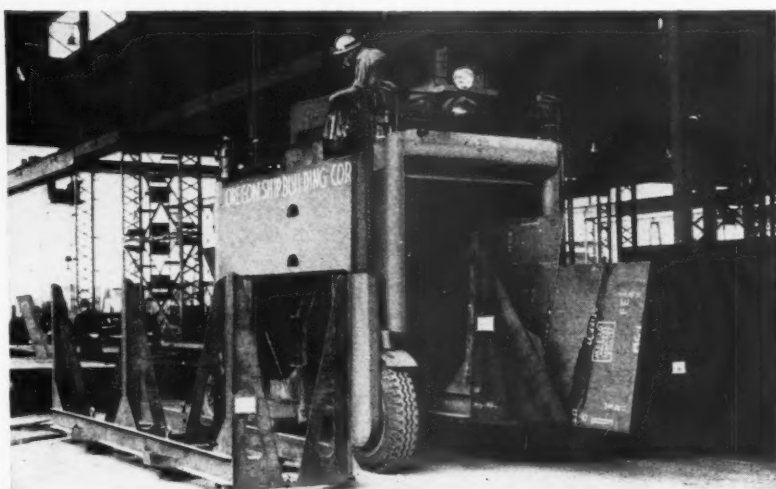
## Straddle Trucks Find New Service In Shipyards

**S**TRADDLE trucks, formerly used almost entirely in the lumber industry, have recently been found useful in the manufacture of ships in the Oregon Shipbuilding Co. yards at Portland, Ore.

With a load space 108 in. high and 57 in. wide, a straddle can conveniently carry cut and formed plates and shapes up to 90

in. wide, when stacked vertically in special racks, one of which is shown alongside the loaded truck in the illustration.

The truck will transport loads up to 30,000 lbs. Almost no time is lost in picking up or dropping the load. The steel is left in the rack until it is needed, and thus additional time is saved.



## Manganese Tests

- Low-grade domestic manganese ores smelted at the Salt Lake City experiment station of the U. S. Bureau of Mines have yielded a manganese that meets all specifications of ferro-alloy furnace feed, according to Director R. R. Sayers of the Bureau. Ores from the Battle Mountain area in Nevada and the Batesville, Ark., deposits were smelted with either iron or copper sulfides and the resulting matter refined and sintered to a 60 per cent manganese product.

## Sharing Facilities

- Joint use of production facilities is being undertaken by the oil industry in California, to conserve materials and manpower. L. L. Aubert, president of the Bankline Oil Company, is chairman of the subcommittee appointed to work out the plans.

## Production Records

- Five new production records were established by the Columbia Steel Company in October in the company's Pittsburg, California, works. In the plant foundry, which is working almost entirely on ship castings, shipments were 12.6 per cent above those of any previous month, while actual production was up 8 per cent. Production of

hot metal for ingots and castings increased 7.4 per cent. Drawn wire was up 3.6 per cent and production of welding wire for West Coast shipyards was 6.5 per cent over the previous record. A slight increase in the production of all types of nails was also recorded.

## Western Contractors Bid

- California contractors led the bidding for the construction of knocked-down wooden barges for which the Maritime Commission at Washington received a total of 93 bids from contractors in 21 states. Californians offered 11 bids while Oregon tied for second place with Florida with eight bids.

## Salmon Pack Lower

- The 1942 Alaska salmon pack totaled 5,015,375 cases from 71 canneries, as compared with 6,865,375 cases packed in 1941, according to the final report for the season of the United States Fish and Wildlife Service. Fewer canneries were in operation during the entire season than last year and the entire district designated as the north side of the Alaska Peninsula was closed during the period. Only about 10 per cent of the pack will be available for civilian consumption.



# WESTERNERS AT WORK...

## MARINSHIP SET-UP

K. K. Bechtel has been elected president and director of Marinship Corporation, which has succeeded the venture known as the W. A. Bechtel Co.—Marinship Division. W. E. Waste is general manager as well as a director. These men are the active



K. K. BECHTEL  
Heads New Marinship Set-up

heads of this shipyard, but S. D. Bechtel and John A. McCone also are vice presidents and directors. The ownership of the corporation is vested in J. H. Pomeroy & Co., Inc., Raymond Concrete Pile Co., MacDonald & Kahn, Inc., Morrison-Knudsen Co., Bechtel-McCone-Parsons Corp. and W. A. Bechtel Co.

## PLYWOOD PRESIDENT

Carl Stromberg now heads the Peninsula Plywood Corp., Port Angeles, Wash., as president.

## WPB CHANGES

Several changes in the executive staff of the regional WPB offices at San Francisco, constituting the first step in the nationwide decentralization policy, became effective December 1. L. Edward Scriven, who has been Assistant Deputy Director General for Field Operations at Washington, was appointed Chief Deputy Regional Director at San Francisco, succeeding Henry S. Wright, who returned to his home city of Phoenix to direct the Arizona WPB offices at Phoenix and Tucson. Meanwhile James A. Folger, who has been Deputy Regional Director in charge of priorities, has gone to Washington to be chief assistant to Wade T. Childress, Deputy Director of Field Operations, and will cover the field activities of the 12 regional offices. Murray Brookman, Regional Manager of Production, is now Deputy Regional Direc-

tor in charge of field operations in the six western states controlled by the San Francisco office. His old post will be taken by Stewart C. Griswold, Regional Manager of Priorities, who will have charge of facilitating war contracts in cooperation with the armed services, and the vacancy thus caused will be filled by Charles S. Stokes, recently Staff Representative of the Division of Industry Operations at Washington.

## WLB LEADERS

Ben H. Kizer, prominent Spokane attorney and chairman of the five-man West Coast lumber commission, has become an associate member of the War Labor Board.



BEN H. KIZER  
Knows All About Labor

Mr. Kizer also is active in the Northwest Planning Council.

Dean Ballard, manager of the labor relations department of the Seattle Chamber of Commerce has been reappointed as labor production consultant of the War Production Board, an appointment he has held since the inception of the WPB. Recently Ballard was made a member of the new five-man West Coast Lumber Commission.

## LOCKHEED LAURELS

V. N. Krivobok, structural research engineer for Lockheed Aircraft Co., has been elected a trustee of the American Society for Metals. Another Lockheed man, R. P. Della-Vedova, won third prize in the Resistance Welder Manufacturers Association for papers contributing to progress in resistance welding.

## NEW ICE MAN

R. J. Bailey is the new president of the Union Ice Company, operators of approximately 80 plants in California and Nevada. He succeeds the late Charles K. Melrose.

## DUPONT MANAGER

John T. Edgerly, who has been director of refinish sales at Wilmington Delaware, for E. I. Du Pont de Nemours & Co., Inc., for the last eight or ten years, is the new Du Pont regional manager of the finishes division for the Pacific Coast. He succeeds David G. Kennedy, who was transferred to Washington, D.C.

## IN PULP INDUSTRY

Walter DeLong has been appointed vice president of the St. Regis Paper Co. in Tacoma, succeeding the late Ossian Anderson. For the past 14 years he has been operating manager in direct charge of mills, logging camps and other productive activities of the Puget Sound Pulp & Timber Co., Bellingham, Wash.

## CHOOSE AIR MAN

Mac Short, vice president of Vega Aircraft Corporation, gets the honor of being the first president of the Society of Automotive Engineers who is not a full-fledged automotive man. During the past year he has been vice president for aircraft activi-



MAC SHORT  
Holds Long Suit in Aircraft

ties in the Society. Mr. Short was one of three men who organized the Vega company five years ago, and has become recognized as one of the outstanding aeronautical engineering executives in the United States.

## REPRESENTS WELDERS

P. D. McElfish, chief materials engineer, Los Angeles Division, Standard Oil Co. of California, is the Pacific Coast vice-president of the American Welding Society for the coming year. He was elected at the annual convention in Cleveland in October.

## STILL SELLING PAINT

Sidney C. Rasmussen has been elected president of the General Paint Corporation, succeeding the late J. C. Mullins. He had been vice president of the company in charge of the Portland division. Mr. Rasmussen's entire business life has been spent in the paint manufacturing business. He was a member of the old-established firm of Rasmussen & Co. in Portland, which his father founded over 50 years ago. Incidentally, the father, J. P. Rasmussen, at 90 years of age remains an active director of the corporation.

## KALUNITE ENGINEER

J. Paul Freeze has been appointed plant engineer for Kalunite, Inc.'s Salt Lake City Utah plant. Formerly, he was senior draftsman for the War Department, Corps of Engineers at Portland, Ore.

## JOINS FORESTRY STAFF

E. H. MacDaniels has been appointed to the joint forestry staff of the West Coast Lumbermen's Association and the Pacific Northwest Loggers Association, as a further move in the program of industrial forestry in the Douglas fir region. MacDaniels, a graduate from Oberlin College and the Yale School of Forestry, entered



**E. H. MCDANIELS**  
To Industrialize Forestry

the Forest Service in 1909. His work covered timber cruising, railroad surveying and service as inspector of state cooperation under the Clarke-McNary Act. He will make his headquarters in the Portland office of WCLA. Harold V. Simpson, a native of Oregon, has been sent to Washington, D.C., to act as permanent representative of the Association.

## WITH EASTERN CONCERN

Whitney C. Collins, whose firm of Collins Powell Co. has represented the Elastic Stop Nut Corp. of Union, N.J., in Los

Angeles, for a number of years, has been elected vice president in charge of sales policy for the Elastic concern. He has been a director of the company since 1940.

## IN AVIATION LIMELIGHT

Harry Woodhead, who recently was named president of the Aircraft War Production Council, Inc., now has been elected president of Vultee Aircraft, Inc., succeeding Richard W. Millar. I. M. Laddon who was elected vice president, also is vice president and general manager of Consolidated Aircraft Corp.

## PABCO PROMOTION

Fred W. Rea has been advanced to the position of manager of public and industrial relations of The Paraffine Companies, Inc. Formerly, he was advertising and sales promotion manager of the floor covering



**FRED W. REA**  
Managing Paraffine's Relations

department. A native Californian, Rea is widely known in Northern California advertising and business circles. Prior to his association with Paraffine, he was west coast regional director of sales promotion for the General Electric Co.

## PROF. TAKES OFF

Dr. George L. Shue, formerly professor of physics at the Montana School of Mines, is now a member of the engineering staff of the Consolidated Aircraft Corp., San Diego. Dr. Daniel Q. Posin succeeds him at the school.

## SUPERVISES CANNERIES

C. B. Weston has been appointed general superintendent for the Pacific Coast division of Libby, McNeill & Libby, succeeding Eugene Geary, retired. Weston, a graduate of Stanford and an active figure in the quality grading studies of the Canners League of California, has been assistant to Geary for a number of years.

## SHIPYARD HEAD

A. W. Talbot is president of the Bellingham Marine Railway & Boatbuilding Co., Bellingham, Wash. About a year ago, he took over this yard which was used for pleasure crafts, and converted it to building small vessels for war use. Recently, he launched the HMS Lincoln Salvor, a 183-foot long by 35-foot wide salvage vessel,



**A. W. TALBOT**  
Launching Lots of Ships

the largest wooden vessel to be launched in the Puget Sound area since World War I. One half hour later, a minesweeper was sent down the ways, making the eighth ship built by this organization. They have been awarded a Navy "E."

## EMSCO V-P

William T. Powell has been elected a vice president, Emsco Derrick & Equipment Co., Los Angeles. He joined Emsco in 1937, in the fabricated plate division, and since June, 1941, has been manager of the War Materials Division.

## TUCKER TAKES OVER

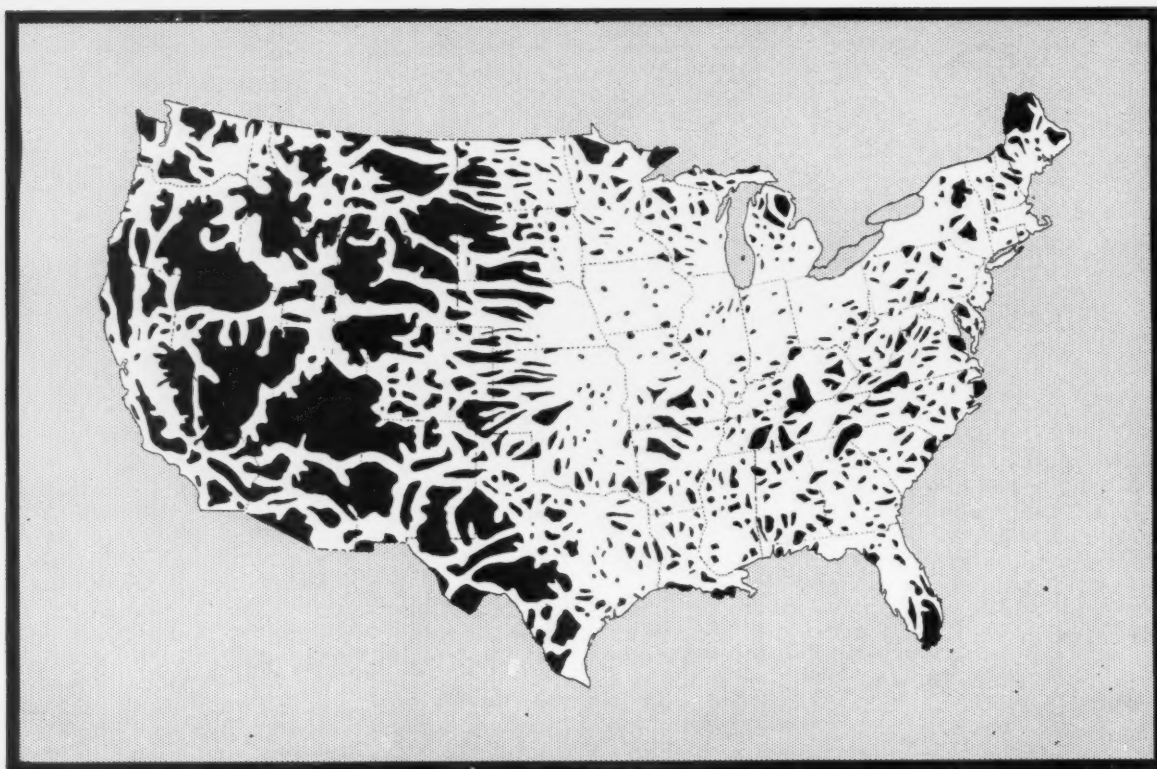
O. A. Tucker is the new general manager of the Tacoma plant of the Seattle-Tacoma Shipbuilding Corp., succeeding Walter Green, who was made assistant to the president.

## LUMBER BUYER

Henry N. Anderson, president of the Twin Harbors Lumber Co., has become a contract employee of the Navy's Bureau of Ships. He has established an office in Portland, Ore., for the purchase of all kinds of lumber for the Navy.

## FOOD PROCESSORS ASSN.

Elmer H. Howlett, Los Angeles, has been chosen secretary of the Southern California Food Processors Association, succeeding W. E. Beach of McKeon Canning Co., who was in charge of the work for the first year of the organization's existence.



• Much Western Development is in Areas Shown in Black, 25 miles or more from any rail line.

## HIGHWAYS—West Depends on Them

**Industrial Distribution To and From Off-Rail Military Establishments and Supply Sources Necessitates Continuance of Motor Transport Systems**

**N**CESSITY of maintaining motor truck and bus service to military establishments that have been widely dispersed through the West to reduce the danger of air or naval attack and also to provide open terrain for training purposes will be an important factor in the control of motor transportation by the Office of Defense Transportation which becomes effective December 1.

Western regions are much more dependent on motor transportation than other parts of the country that are criss-crossed with railroads. The entire railroad mileage in the eleven Western States is actually 300 miles less than that of an eastern industrial area only one-fifth as large, composed of Ohio, West Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York and all of New England except Maine.

Many of these Western military posts are located entirely away from rail facilities, and consequently depend altogether on regular deliveries from tank trucks carrying milk and gasoline, refrigerated trucks and trailers hauling meat and other perishables and on miscellaneous shipments of foodstuffs, airplane parts and supplies of all kinds. Some of this truck traffic

is short haul, and part of it long distance movement.

Strategic minerals also are being produced in many localities in the West not reached by railroads, and must be trucked many miles to railheads, stockpiles or factories that convert them into materials used in the war effort.

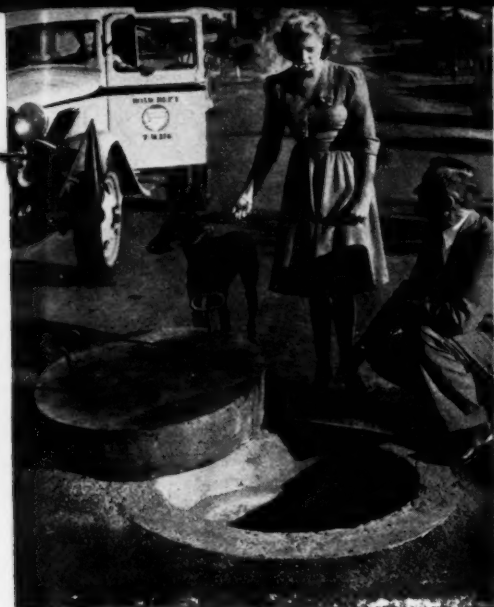
As the war effort has increased, the need for trucking facilities in that service has grown also, while civilian freight correspondingly has declined. Eighteen interstate motor carriers reported that 45.4 per cent of their outbound tonnage from Los Angeles in the week of May 31 to June 6, 1942 moving from 300 to 1500 miles was consigned to military and defense agencies.

The ODT is requiring all trucking operators to obtain certificates of war necessity, renewable every 90 days, and has called for detailed information on amount and type of equipment, mileage, gasoline consumption, commodities transported, etc. A staff of 300 men has been at work in District 9, comprising the three Pacific Coast states, Arizona and Nevada, and when this information is assembled it will be the most complete picture ever prepared of the truck and bus transportation industry.

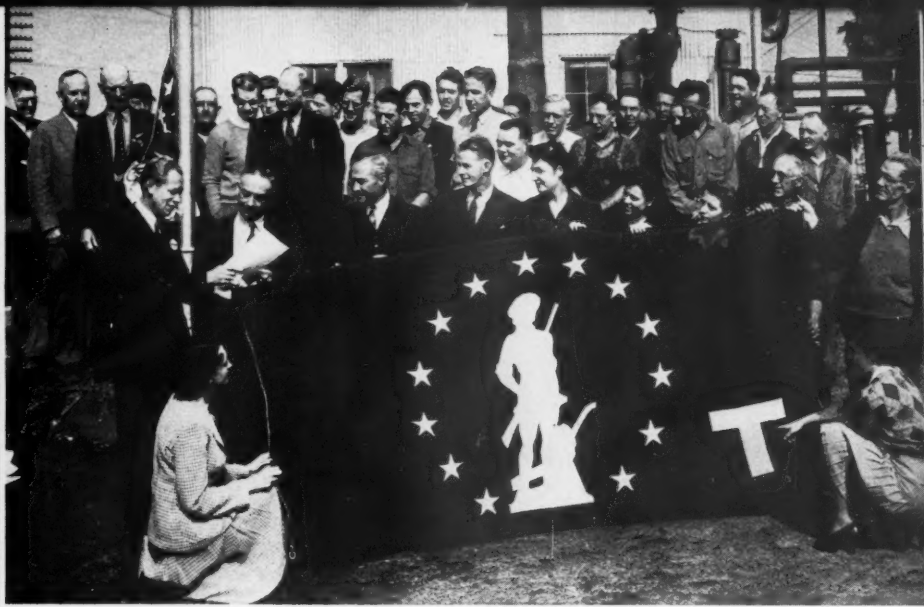
Certificates are issued by examiners who check each application in detail to ascertain whether the transportation involved is essential war effort and in conformity with the ODT's requirements of saving mileage, conservation of tires and equipment. Because of the enormity of the task of building up the required information, it is not believed existing trucking operations will be greatly affected at the outset, but by the time the renewals are in order it may be a different story. Apparently the smaller operators with only one or two trucks will be the ones most affected, since their hauling is on a more haphazard basis.

Difficulties besetting the trucks and busses at the present time are chiefly manpower, parts and the 35-mile maximum speed limit. It has been increasingly hard to keep drivers and shop men because of the drain toward the armed forces and the shipyards, and the supply of parts has diminished while the wear and tear has increased. Diesel equipment is geared for higher speed than 35 miles an hour if it is to be operated with economy, and the motor transportation industry would like to see some relief from maximum speed requirement.





• Miss Beverly Hoyt learns about the wood manhole covers manufactured by American Lumber and Treating Co.



• Tide Water Associated Oil Co.'s employees of the Southern California Pipe Line Dept., Watson, have participated 100% in the purchase of War Bonds! F. E. Coyle is shown receiving the prized "T" flag from Vaughn Boyington.



• First concrete ship of this era just after launching in San Diego Bay. A reader says we were all wet about earlier types being failures.

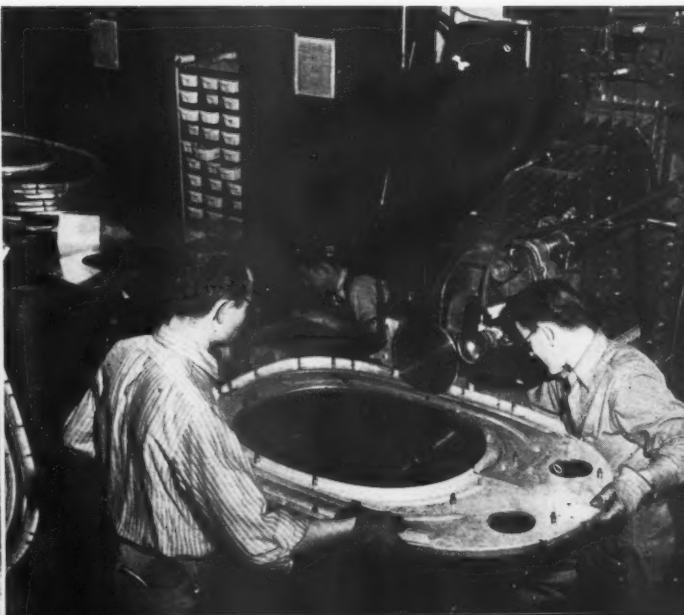
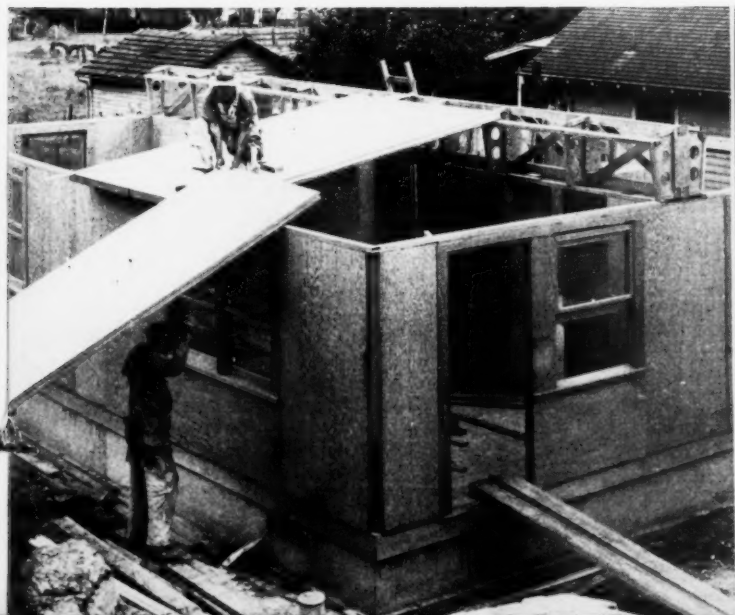
## WESTERN INDUSTRY In Pictures

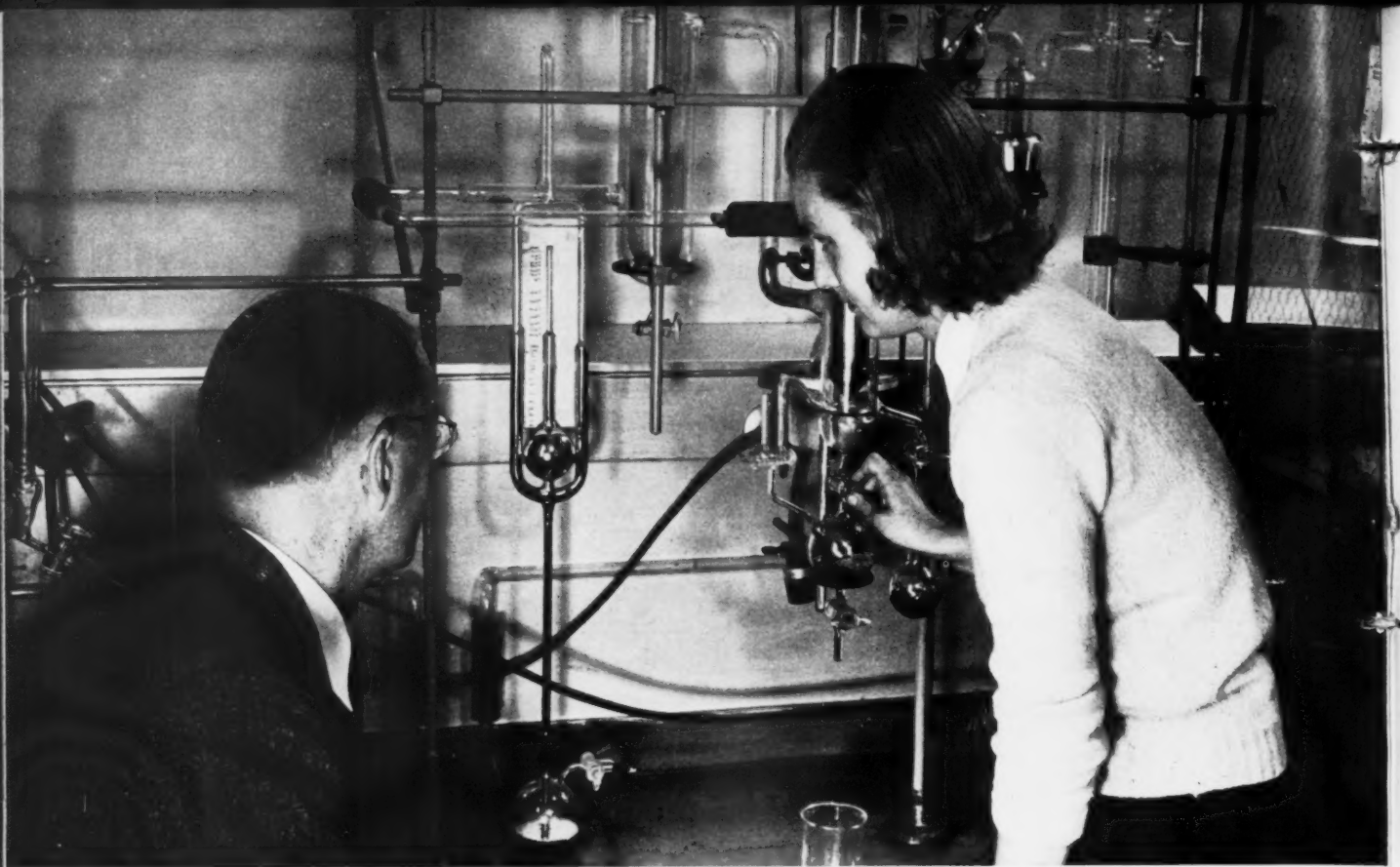
• Flangers at Moore Dry Dock's West Yard are taking the kinks out of a shaft for a tunnel frame. Fernandez, Weetman and Bento are shown in action.



• Prefabricated plywood houses can be put together by two men. Largest panels are 4 by 12-foot roof sections, and all panels are stressed skin construction with plywood glued to both sides.

• According to Lockheed Aircraft Corp., the rotary spot welder below can average 4,137 welds per hour; however, on a rush job of air coolers, this output was tripled. That's turning 'em out!





—Laboratory scene courtesy Standard Oil Co. of Calif.

## Do Laboratory Tests Validate Patents?

**T**HIS question, which no doubt is of vital interest to many chemists engaged in laboratory work, zigzagged through the Patent Office tribunals between yes and no in two recent decisions, and finally came to rest in a mid-way position.

"Reduction to practice," in patent language, means completion of an invention and is an important factor in determining priority between two or more inventors who seek patent protection on the same subject-matter.

Both decisions related to insecticides. In the earlier case, relating to orchard sprays, the Examiner of Interferences made the following findings with respect to certain tests carried on by one Vogel:

"Vogel's experiments were intended to demonstrate the value if any, of these substances as a spraying agent against certain pests attacking orchard crops. Briefly, the procedure involved the spraying of apples with a dispersion in which the concentration of the materials being tested ranged from 1 part in 500 to 1 part in 2000, and, after the coating had dried, five newly hatched larvae were placed thereon. The sprayed apples and larvae were thereupon placed in suitable cabinets a week or more, after which they were

**Question:** Is a laboratory test a "reduction to practice" under the patent laws?

**Answered by** Adelbert Schapp,  
Patent Attorney of San Francisco,  
California.

carefully examined to determine the number of larvae that had succeeded in penetrating the skin of the fruit and establishing themselves therein."

"Obviously the conditions of such experiment are not the same as are encountered in actual spraying operations in the orchard. However, everything considered, they are deemed to approximate ordinary conditions sufficiently to demonstrate whether or not the material tested is useful for the intended purpose."

The Examiner found these tests sufficient to establish reduction to practice. The Board of Appeals agreed with him, but on further appeal, the Court of Customs and Patent Appeals reversed both decisions, principally on the ground that it was a mere laboratory test, and that the results obtained did not throw any light "on the possible performance of the chemicals used if applied under outdoor conditions where

the influence of such factors as variable temperature, rain, sunlight, etc., would be felt. Neither is there any information relative to the possible effect on growing plants."

A similar question came before the Patent Office right after the above decision had been rendered, and in this case relating to Xanthone as an essential active ingredient of an insecticide, the laboratory test was described as follows:

"The mosquito larvae had previously been reared in the laboratory under natural conditions and when they had attained the fourth stage of development, they were used for these tests. Usually 50 larvae were counted in a 100-cc. beaker and each concentration had 10 duplicates of the beaker containing the larvae for tests. All the beakers containing the larvae in the different concentrations of the compound were afterwards placed in the constant temperature water bath and left for at least 18 to 24 hours. Afterwards, the per cent mortality in the various concentrations were determined by counting the number of dead larvae, and the average kill obtained for each concentration used was thus determined."

The Examiner of Interferences, distinguishing this case from the former, held this test to be a proper reduction to practice, on the following reasoning:

"Indeed, in many respects, the mosquito larvae tests on behalf of Smith were more exacting and rigorous than would have been similar tests in outdoor ponds, etc., because substantially all other factors which might have caused the death of the larvae were eliminated. Moreover, fish or other natural enemies of mosquito larvae are not found in many natural breeding places, such as

ditches, rainwater barrels, where run-off water collects. In such places, too, the only other life is usually of a low form, such as algae and various microscopic plants and animals, and any effect thereon by the insecticide is of no consequence.

"Accordingly, in view of all the facts and circumstances, the laboratory mosquito larvae technique of the Department of Agriculture is deemed to establish all necessary conditions for determining the practical utility of any given material as an insecticide."

The Board of Appeals, influenced by the former decision of the higher court, reversed the decision of the Examiner, arguing as follows:

"The party Swaine (the opponent) attacks these tests on various grounds. He contends that the conditions surrounding such tests must necessarily vary materially from the natural conditions under which the larvae exists in nature. It is well known that there are a large number of different species of mosquitoes and, as pointed out by appellant (Swaine), the larvae of these live and exist under quite varying conditions. Nothing is said in the proofs offered by Smith as to the water used in the tests. Appellant contends that the salinity, acidity, and alkalinity are quite material. In addition, it may be said that if tap water was used it might contain some chlorine which might possibly affect the larvae.

"Appellant also urges that acetone (used as solvent) is known to be an insecticide, and when used as a solvent for the Xanthone it might easily introduce an error into the results. The party Smith states, however, that the quantity of acetone present was so small that it could have no detrimental effect. We, however, are not satisfied that this argument is sound. While acetone alone in the concentrations used might have no disturbing effect, still it is possible that it might introduce an error, when used in combination with the Xanthone."

The Court of Customs and Patent Appeals again reversed the decision of the Board and adopted the reasoning of the Examiner, holding in substance that the laboratory test was satisfactory to prove reduction to practice and to prove the utility of the insecticide used; that it was not necessary to test the insecticide on all species of mosquitoes or in all kinds of water, and that, although the acetone might have added to the toxic character of the composition, the tests were sufficient to show that Xanthone was "the essential active ingredient" of the insecticide.

### Progress Made in Dimout Problems

Five thousand requests for variance from the dimout restrictions have been received by the Office of Civilian Defense from industries on the Pacific Coast. Temporary permits have been issued in many cases and investigations instituted as to the advisability of giving permanent authorization.

Arc welding is still the most troublesome problem, but committees in the industries involved are seeking to find means of preventing the glare. Shipyard lighting changes have been progressing, although in many instances the yards have had to practically make over their entire lighting system.

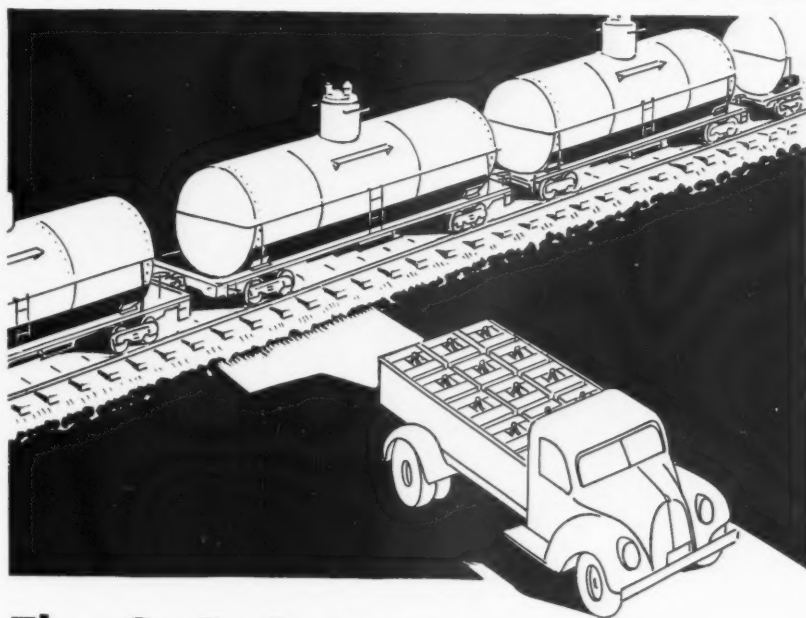
In the lumber industry, it has been found

that closed refuse burners and use of a fine spray which keeps down the glare but permits combustion to go on underneath the surface help considerably to overcome the difficulty. For open slab fires, the remedy seems to be to increase the draft in the daytime and burn the pile down, and then burn only a small pile at night, using the spray to reduce the glare.

Emergency repairs to pipe lines and electric power systems are being handled by permitting temporary lighting and providing windshield stickers for cars using spotlights in such work so that traffic officers will not interfere.

### Clears Machinery

• The Seattle regional office of the War Production Board has announced the creation of the Used Construction Machinery Division in charge of R. E. Williams, well known Northwest construction equipment man. The new division operates as a clearing house for used construction equipment for which an inventory is being made in Washington, northern Idaho and Alaska. Prior to taking over his new post on October 1, Williams was connected with the Seattle branch of the Northwest Engineering Company and before that was with the Pacific Hoist & Derrick Company.



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# Barriers to West Are Also Mental

**Washington Must Be Convinced of Necessity  
For Irrigation and Reclamation Development**

IT MAY surprise you to learn that irrigation and reclamation are chiefly words at WPB. The other day, while discussing the West with Ferdinand Eberstadt, our new strong man, it became very clear that the real things connoted by irrigation and reclamation are not apparent to a New York investment banker.



The words mainly denote something you find on a balance sheet. And thus far the balance sheet connotation of most of the things in the West, aside from ships and planes, does not yet seem to have reached the consciousness of the dominant element in new WPB and OPA. It does not realize that irrigation means food and that reclamation means something more than power.

It is a curious situation because there is constant talk about the vast expansion necessary in our food production. Agricultural Secretary Wickard tells us we must supply pork, butter, cheese, dried milk, eggs and other foods for the new peoples who have come under our protection in North Africa.

There are 30,000,000 of these people, and they tell us here informally that the conquest and occupation of Italy is only a question of time (and short time, at that), which means we must find some foodstuffs for an added 40,000,000 persons. Italy has little food, no coal, and needs something of everything to re-establish a decent standard of Italian life.

We naturally are the source to which the Allied world turns for supplies. They tell us here that we must be ready to provide food because food is expected to be most effective "bait as a lure to peace."

They have in mind that it will be the bait to Spain, where they are literally dying on their feet of starvation, and to France; and, finally, to the Germans. The idea seems to be that bread will be as effective as bullets in winning the war. At least the Wickard school thinks so.

The Wickard school also feels that the United States at present is producing on as many acres as are tillable. At the same time, the Wickard school cautiously holds that Western irrigation projects should be

expanded; and that new projects, capable of quick development, should be initiated as fast as possible.

Secretary Ickes strongly believes in every possible reclamation expansion and has said so pungently to WPB. Months ago he told Reclamation Commissioner Page to make a survey and to prepare a plan and an estimate. Recently the Commissioner spent 5½ hours before the WPB Survey Committee, which is said to have given him a sort of third degree. The Wickard school has been careful about its championship of Western reclamation. Secretary Wickard, according to realistic Washington gossip, almost lost his job last fall, because he insisted too vigorously on an unpopular issue.

Nevertheless, the fact appears to remain that more food must be produced. Present resources appear to be further restricted by

THE HOPIS, up near the Painted Desert, a kindly and domestic people, support themselves chiefly by working on construction jobs, by silversmith work, and by weaving rugs. The war has cut off silver and wool, and has stopped construction jobs in their neighborhood. At best their margin for living is narrow. Your Washington correspondent, who was made a member of the Coyote clan of the Hopis some 25 years ago, received a letter the other day from his sponsor-father, 73 years old. The dignified and kindly old man was injured months ago by a truck. After he came out of the hospital, shaky and weakened, he found his crops had suffered and that it was hard to drag the wood home for the hard winter ahead. He needed clothes. So he wrote his sponsor-son in Washington and told him about it. He said there are a number of the members of the Coyote clan who have had rough going the past year. What they most need are warm clothes. He suggested if Son Black Ear knew anybody who has some old clothes he would be glad if the word might be passed along to send them to Oraibi. So here, with the help of the editor, I, Black Ear, pass along the word. If you have some old clothes you would like to send to my sponsor-father, mail them to Mr. Herbert Yestewa, Box 53, Oraibi, Arizona. I will be glad to reimburse you for the postage if you will let me know what it is.

—Arnold Kruckman.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

sharp decline in the supply of farm workers, and by deep curtailment in equipment. F. O. Hagie, Secretary of the National Reclamation Association, and others, strive sturdily to arouse a realization of the potential resources which could be made available quickly in the Pacific West.

But WPB, now dominated by the Army, sees the West Slope almost as a producer only of ships, planes, and, in a lesser degree, raw materials in the form of metals and other minerals, and lumber. Moreover, WPB people do not feel any pressure from the West Slope for expansion of irrigation and reclamation, and this apparent apathy is translated to mean that the West Slope is not particularly interested.

The lack of pressure is ascribed by WPB to lack of labor and requisite facilities; while those here who know the West Slope better ascribe the apparent indifference to a misunderstanding of the situation. Some poet once said that "distance lends enchantment to the view." The enchantment at your end of the viewpoint apparently is your present absorption in the extraordinary expansion of your industries, and your just as natural tendency to hold that Uncle Sam here in Washington is a wise old bird and that he knows best, and in the end he will adjust everything so you will get your just dues.

It is genuinely refreshing to find such wholesome trust and confidence. At the same time bear in mind that Uncle Sam, like God, helps those who help themselves.

If you think you have the resources to help furnish the food for the 100,000,000 to 150,000,000 foreigners who must be fed in the future as part of the blitz that will win the war, and you wish to put those resources to work as soon as possible, let those WPB people know what you think, and impress your thought on them earnestly and vigorously.

Sell the idea to the Army people among you. And impress your ideas on the members of Congress, and especially the new members. It is wise to convince them, even

though the next Congress, which begins to function in January, will not be doing much until spring.

Remember this new Congress represents a vote for the opposition which carried states with 80,000,000 population, having an electoral vote of 292, far over the majority necessary to elect a President. The margin in the House between Democrats and opposition is so scant that it is certain on many domestic problems some members elected as Democrats will vote with the opposition and give the opposition a controlling majority.

All this has an important bearing on the manpower muddle, the solution of which obviously is extremely important to the Pacific Slope. Already you have had an intimation of its significance by the WPB-WMC ruling that no more contracts shall be made with producers in areas where there are labor shortages. Congress is decidedly taking a hand in this matter, and Congress will undoubtedly say the last word.

Under the directive issued by Chairman McNutt of the War Manpower Commission at the request of the WPB, the procurement agencies of the Army, Navy, Maritime Commission, Treasury—all the agencies that place the totality of war contracts may not place business where there

is labor shortage, and 66 areas are specifically listed.

In Group 1, no more contracts may be let unless there are no facilities elsewhere to meet production requirements. This includes Ogden, Salt Lake City, Cheyenne, Phoenix, San Diego, Las Vegas, Nev., Portland, Seattle, Tacoma, Bremerton, Spokane, Vancouver. Group 2 includes localities where labor shortages are expected, and no more contracts may be placed there which have a delivery date of more than six months. This includes Los Angeles, San Francisco, and Denver. Group 3, listed as having labor surpluses, includes Albuquerque.

The directive is explained as meaning that contracts for certain items will not be placed in these labor shortage areas if the same items can be produced on time and with a minimum requirement of new machinery and equipment in areas where the labor supply is ample and is convertible from one industry to another.

Six projects of the Bureau of Reclamation have been shut down by the WPB. These are the Davis, Keswick, Granby and Anderson dams, Continental Divide tunnel, east powerhouse at Grand Coulee, manufacturer of generating units in the west powerhouse and for the fifth unit of the Shasta dam project.



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## REWARD

A VERY GENEROUS reward will be paid to anyone who finds the old gentleman on or around December 25th. This reward will be *doubled* if the old gentleman can be persuaded to visit each one of our friends and clients to express our very hearty good wishes for a Merry Christmas. The reward will be *tripled* if he will leave each of our friends a huge stocking filled with happiness and prosperity and faith in the future and thanks to be alive and living in this grand old U.S.A.

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# LABOR

## AND THE INDUSTRIAL WEST

**T**WO 10-hour shifts instead of three eight-hour tricks would bring more production and save much time, in the opinion of a worker in one of the San Francisco bay district shipyards. In a letter to *Western Industry* he outlines the situation as follows:

"John Doe starts work at the 7 a.m. whistle. By the time his tools are collected, morning 'hellos' and small talk with fellow workmen are completed and his reminiscences of a warm bed put behind, his real work day will commence. But by this time the clock reads 7:30 and already half an hour has been lost.

"The quitting whistle blows at 3:30 p.m., but at that we can say that John's workday is complete at 3 o'clock. His expectation of the forthcoming evening is of far more importance than the work at hand, and besides he must gather up his tools, wash his face, say goodbye to his fellow workers, complain of how hard he has worked and gain a few moments rest to be in shape for the mad rush to get home.

"This is a repetition of what occurred with the John Does on the graveyard and swing shifts before him. Ergo, three full hours lost in each 24 between the three of them. This, however, is trivial compared with the other 15½ hours that are completely lost each day, which I will proceed to explain.

"So far as accomplishment is concerned, the combined effect of both the swing and graveyard shifts is nil. Of course, the number of men employed is not as great as on the day shift, but regardless of this fact, the comparison does not justify the expense and waste of vital war manpower!

"The reason for this is purely psychological. Swing shift constitutes 7½ working hours, with a 10 per cent bonus for night work, while graveyard is only 7 hours with 15 per cent bonus. Offhand, there seems to be no great difference of time involved between the day and night shifts. However, when an hour of wasted time is deducted from a 7-hour shift, there remains only six working hours. This leaves barely enough time to get started, so John Doe figures! So he may as well take it easy and catch up on his rest!

"Inaugurating two 10-hour shifts would remedy this. One hour for lunch and one hour between shifts, thus alleviating traffic and parking conditions, public transpor-

tation facilities and, above all, the saving of many man hours for war industry.

"This work schedule would be on a 5-day basis, the result being 100 working hours for both shifts, against the present 135 hours. On the surface there seems to be a loss of 35 working hours a week, but consider that we have eliminated one shift which was inclusive of one lost hour. Here we have gained 6 hours per week, bringing our total from 100 to 106.

"Also, we have produced a shift which is inclusive of sufficient hours in which to accomplish the same amount of work as is done during the day—another elimination of wasted hours.

"The question of wages is negligible. Each man employed would be overjoyed at the thought of two days a week away from the job. At present the wage scale is 40 hours straight time plus 8 at overtime. Under this plan the various industries could well afford to pay straight time for 40 hours and overtime for the remaining 10 hours."

### Relax Lumber Freeze

• Relaxation of the labor freeze in the lumber industry has been ordered by the War Manpower Commission to permit transfer of loggers and other workers in certain areas of the Northwest to other localities where climate will permit lumber operations to continue during the winter.

### Aircraft Case

• Reports to the War Labor Board on the stabilization of aircraft wages are being prepared by Paul R. Porter, WPB labor advisor, and Arnold Tolles, Bureau of Labor statistics executive, following the recent hearings in Los Angeles. Recommendations for settling wage disputes at North American and Vultee also will be submitted.

### Labor Sources For Shipyards

One-sixth of the workers hired by shipyards in the Pacific Northwest come from other shipyards, one-twelfth from the lumber industries and one-tenth from retail and wholesale trade, the U. S. Department of Labor reports. Its figures were based on records taken from four shipyards in the

area for a single week in June, 1942, when 2,453 workers were hired.

Forty-two per cent of these workers were drawn from other manufacturing industries, including other shipyards, 46 per cent from non-manufacturing industries and 12 per cent either had not been employed previously in any industrial occupation or else had been employed in some unknown occupation. Some of the shipyard workers were transferred by agreement between the various yards while others transferred of their own initiative. The survey included accessions from all departments of the shipyards, and not merely those doing manual labor.


Some of the more important specific classifications were as follows:

Shipbuilding .....	17.0%
Miscellaneous non-manufacturing .....	7.3
Logging, sawmills, etc. ....	6.9
Public utilities .....	6.9
Government, except education .....	5.7
Iron and steel .....	4.7
Self-employed, except farm .....	4.2
Students .....	* 3.7

\* Accounted for by fact count taken in school vacation

### Recommend Equal Pay

• Legislation providing equal pay for women for comparable work performed was recommended by the California state convention of the CIO at Los Angeles last month.



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## Shipyard Wages Higher in West

Pacific Coast shipyard wages average from 7 to 20 per cent higher than the country as a whole, ranging from \$1.034 per hour on the Pacific Coast to 77.6c on the Gulf Coast, according to the U. S. Bureau of Labor. Its study made in the spring of 1942 before the wage-stabilization agreements covered 54 yards. Comparison by regions is as follows:

	Construction Yards	Repair Yards
UNITED STATES .....	\$0.960	\$0.971
Pacific .....	\$1.034	\$1.166
Gulf .....	.776	.796
Atlantic .....	.966	.914
Great Lakes .....	.861	1.013
Inland .....	.795	

## 48-Hour Week

• California State Chamber of Commerce recommends a 48-hour week for the duration of the war emergency, with overtime payable only after 48 hours, more liberal deferment of key agricultural workers, no recruiting of labor by the U. S. Employment Service in rural areas where agriculture, mining or lumbering industries are experiencing labor shortages, use of Japanese in agriculture if approved by the Army, importation of additional workers from Mexico.

## Boycott Decision

• Boycotting by the Teamsters Union of the Los Angeles branch of Park and Tilford to require all of its clerical and sales employees to join one or the other of two locals of the Teamsters Union, declaring its products "hot cargo" and instituting a secondary boycott, constituted illegal coercion under the Wagner Act and is subject to restraint by a state court of equity, according to a restraining order issued by Judge Henry M. Willis in the Los Angeles County superior court.

## Here and There With Labor

Colleges just don't teach about labor troubles. They also experience them. Washington State College employees struck for nine days, got 44-hour week, two weeks vacation, pay increases, right of conference with authorities. Bus drivers on Seattle-Renton line raised from \$1 to \$1.10 an hour. San Francisco went without meat for three days while slaughterhouse workers took a "holiday" because their wage arbitration was proceeding too slowly.

West Coast Lumber Commission ordered back pay increases of 7½c an hour from Feb. 15 to May 16 for 6000 plywood workers. Locked door at Northwest Door

(Continued on next page)

# Now New DURAMASK

## A Paint Department Floor Mask

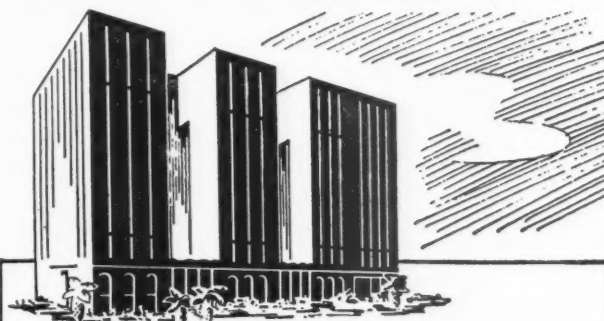
TURCO DURAMASK solves the problem of floor protection and maintenance in the Paint Department. It covers the floors with a durable, white water-soluble coating, which prevents adhesion of paint sprays and residues from stripping operations. When floor cleaning time comes, flush or mop away the protective coat of water-soluble Turco Duramask together with the paint. Turco Duramask is applied by brushing. Saves cleanup time. Makes for easier maintenance.

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## LABOR—Cont'd from preceding page

Co., Tacoma, caused quarrel between two factions and a work stoppage. Commission ordered work resumed pending settlement.

Cannery Workers Union (AFL) enjoined from striking against Val Vita Food Products at Fullerton, Calif., because contract signed in 1941 still in effect. Bremerton, Wash., auto mechanics struck and got \$1.25 pay scale, same as Seattle and Tacoma, 40-hour week, guarantee of five hours overtime weekly.

## Suit Against Pirating

• Suit to stop AFL union agents from "pirating" its workers and to deter National Labor Relations Board agents from procuring "confidential" information about its business has been filed in the federal court at Los Angeles by Monarch Pattern & Foundry Co. It is alleged that the business agent of the pattern makers' union threatened to take Monarch's workers away one by one and get them jobs in other plants if Monarch did not sign a contract with the union.

## Handling Wage Increases

• Negotiations involving labor contracts increasing wage rates above those in effect on Sept. 15 should contain a clause requiring the approval of the National War Labor Board to make the contract effective, the Merchants and Manufacturers Association of Los Angeles advises. All increases put into effect before October 3 have been approved by the board, subject to review. Employers of eight or less employees have been exempted from application of the order.

## BUSINESS BOOKS

• *Principles of Employment Psychology*, by Harold E. Burt. The need for accurate procedures for rapidly putting new people to work in war industries has stimulated a new and widespread interest in employment psychology. This volume brings completely up to date the current principles and procedures in this entire field, for the coverage of topics includes mental tests, both general and special, vocational aptitude tests, rating scales, trade tests and job analysis techniques. Price, \$4.50. Published by Harper & Brothers, 49 East 33rd St., New York, N.Y.

• *Machine Shop Work*, by John T. Shuman. Written on the basis that consistent progress in machine shop work cannot be made unless the student or worker understands the principles underlying the use of the various tools and machines common to a modern shop. Emphasis is placed on the fundamentals behind the tools of the trade, with special attention given to the operation of the standard machine tools. Contains 572 illustrations and 49 tables. Price, \$3.50. Published by American Technical Society, Drexel Avenue at 58th St., Chicago, Ill.

• *How the New Priority System Works*. An analysis of the revised Production Requirements Plan, generally known as the PRP, in an effort to assist industrialists in making necessary adjustments under the new business-government relationship. The PRP is the key control over material flow. Price, \$2.00. Published by The Research Institute of America, Inc., 292 Madison Ave., New York, N.Y.

• *Procedure Handbook of Arc Welding Design and Practice*. Plays the role of a "manual of arms" for an ever-growing host of workmen who have turned to welding on the industrial front. Authors of the book have made every effort to provide as much complete and up-to-date information as possible to help the men in the shops, shipyards, airplane factories, ordnance plants and arsenals. Various methods and techniques used in welding are fully explained with a view to speeding welding design and engineering. Significant information is given on such subjects as welding symbols, new allowable stresses, preheating for welding, stress relieving, procedures, speeds and costs, "Fleet-Fillet" technique, general metallurgical characteristics of metals and alloys. Price, \$1.50. Published by The Lincoln Electric Co., 12818 Coat Road, Cleveland, Ohio.

• *Plant Protection*, by E. A. Schurman. Management is told how to set up and arm a protection department, how to reorganize a present set-up, and men on the force are told how to do their job efficiently whether it be passing trucks through the gate or running down sabotage. Well illustrated, with reproductions of important office and control forms. Price, \$2.00. Published by Cornell Maritime Press, 350 West 23rd St., New York, N.Y.

## For Mining Machinery

• A mining machinery clearing house in Los Angeles for Southern California, Arizona and Nevada, to speed installation of facilities for mining strategic minerals, and to rationalize salvage collection of scrap metals, has been set up by the Los Angeles County Chamber of Commerce.

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## WESTERN

# TRADE WINDS

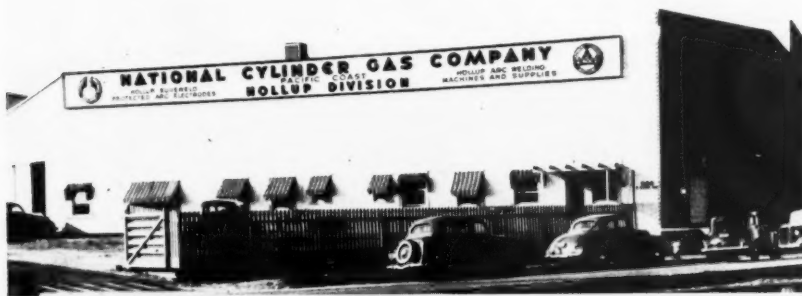
NEWS ABOUT THOSE WHO DISTRIBUTE AND  
SELL INDUSTRIAL EQUIPMENT AND MATERIALS

National Cylinder Gas Company of Chicago have opened a Pacific Coast plant, which has already produced several million pounds of "Sureweld" protected-arc electrodes in the three months it has been in operation. The most up-to-date production machines and methods are used at the new plant to assure maximum output and high quality. B. R. Tryna, plant superintendent, and Arnold Russell, chief inspector, have

had many years of experience at National's midwest plant.

This is the third factory for the company, the others being in Chicago and Canada. Pacific Coast sales offices are at 4950 Santa Fe Avenue, Los Angeles, with A. A. Klein, vice-president, in charge.

National carries a complete line of Holup AC and DC welding machines and supplies to meet all requirements for the arc welding process.



• Another new industry starts production in the West. National Cylinder Gas Company has opened the first electrode plant on the Pacific Coast, using the most up-to-date machinery and methods.

Precision Bearings, Inc., have appointed L. L. Slatten as district manager of their Arizona branch located in Phoenix. This territory also covers Utah and Imperial Valley in California.

The Irving Subway Grating Co. have opened a branch plant at Judson and Pacific streets in San Francisco, to specialize in the manufacture of airplane landing parts. J. C. Lynn, formerly with the Gilmore Steel Co., has been named manager of the new plant.

The John W. Stang Corp., New York City, have established an office and yard at 2322 Newton Ave., San Diego. A large stock of well-point is carried for sale or rental. Ed Slosson is in charge of the office.

Western Research Laboratories, Los Angeles, have appointed Dr. Carl Albin, eminent Swiss chemist and geophysicist, to assume complete charge of chemical analysis and physical testing operations here. Dr. Albin has been associated with the faculty of the Madame Curie Institute in Paris.



Accurate Screw Machine Products have moved to new headquarters at 4062 Hollis Street in Emeryville Calif. Albert Wright heads this organization.

Lyon Metal Poducts, Inc., Aurora, Ill., has appointed J. T. Bolan as Western District Manager with headquarters in Los Angeles. He succeeds Glenn R. Smith, who entered the Army as a captain in Chemical Warfare Service.

The Standard Construction Co., 1409 East Madison St., Seattle, have added a new department to be known as "Standard Contractors Supply." A complete warehouse stock of concrete form tys and timber connectors will be carried. The department will be under the management of J. "Dusky" Brown.

E. D. Bullard Co., manufacturers and distributors of industrial safety equipment, have moved their Denver office from 56 Wazee Market to 18 Wazee Market. Howard Timms is in charge.

Industrial Equipment Co, Oakland, long-time representative in Northern California for Dempster Bros., Inc., Knoxville, Tenn., manufacturers of dumping equipment, now are their southern California representatives also.

General Petroleum Corp. has transferred W. B. Meredith from Los Angeles to Seattle to take charge of the industrial lubrication division.

B. F. Goodrich Co. have named Donald W. Fairbairn as district manager for the newly created office for national sales and service division for the Pacific Coast area with the exception of Seattle. He will make his headquarters in Los Angeles. W. R. Edwards succeeds Fairbairn on rubber tracks for military vehicles; H. V. Dwight is sales engineer on rubber tracks; W. B. Collier is the sales engineer on fuel cells.

Pacific Wood Products succeeds the Oregon Cedar Products, Inc., in Grants Pass, Ore. F. N. Lotridge, formerly of Philadelphia, heads the new company.

Weber & Conroy, electrical contractors, have moved their offices to 30 Erie Street, San Francisco. Their old address was 3211 Mission St.

Newt Harris, district manager for the National Twist Drill & Tool Co. discussed recent drilling developments and research at the November meeting of Golden Gate chapter, American Society of Tool Engineers.

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EXbrook 3038



# THE WEST ON ITS WAY

## ARIZONA

**TEMPORARY HANGARS**—J. K. Thomas and Theo. A. Beyer Corp., Los Angeles, were awarded a \$500,000 contract by the U. S. District Engineer Office, Los Angeles, for construction of temporary hangars at an airfield in Maricopa county.

**CONTROL TOWER**—Del E. Webb Construction Co., 302 South 23rd Ave., Phoenix, will erect a control tower at an air field flexible gunnery school in Mohave county. Contract under supplemental agreement by U. S. District Engineer Office, Los Angeles.

**CANTONMENTS**—Jerome A. Utley, Detroit, Mich., will construct 12 cantonment buildings at a depot in Coconino county at a cost of \$200,000. Contract by U. S. District Engineer Office, Albuquerque, N.M.

**AIR BASE FACILITIES**—A. Teichert & Son and John Gist, Sacramento, have been awarded a \$2,000,000 contract by the Albuquerque U. S. District Engineer Office for the construction of housing and airfield facilities for ground air support command base in Cochise county.

**BUILDINGS AND UTILITIES**—Del E. Webb, 302 So. 23rd Ave., Phoenix, has been awarded a \$500,000 contract by the U. S. Engineer, Los Angeles, for the construction of additional buildings and utilities in Maricopa county.

**DISMANTLING AND REASSEMBLING**—Daley Corp., 4430 Boundary St., San Diego, Calif., will dismantle, transport and reassemble temporary buildings at a gunnery base in Maricopa county. \$100,000 contract by U. S. District Engineer Office.

**CHEMICAL WARFARE**—J. S. Sundt, P. O. Box 2592, Tucson, has been awarded a negotiated contract in an amount less than \$50,000 for construction of chemical warfare facilities at an airfield in Pima county.

**ELECTRICAL SERVICE**—Ray DeBerge, 2611 No. Central Ave., Phoenix, will install electrical service and outlets for parking apron opened at a gunnery base in Pima county. Contract for \$50,000 by U. S. Engineer Regional Office, Phoenix.

**TRANSMISSION LINE**—Larson Construction Co., Denver, will construct a 65-mile transmission line from the Parker power plant to the Bagdad Copper Corp. plant.

**AIR CONDITIONING**—Del E. Webb Construction Co., 302 So. 23rd Ave., Phoenix, will air condition a link trainer building at an Air Force Flexible Gunnery School in Mohave county. Contract for \$50,000 by U. S. District Engineer Office.

**TARGET RANGE**—Morrison-Knudsen Co., 810 Title Guarantee Bldg., Los Angeles, will construct a target range in Mohave county.

**RAMP AT RANGE**—H. L. Royden, P. O. Box 3707, Phoenix, will construct a ramp at a gunnery range in Pima county. Contract for \$50,000 by U. S. District Engineer Regional Office, Phoenix.

**COOLING SYSTEM**—Hal Crumly, Fifth and Towne, Pomona, will install an evaporative cooling system in hospital buildings at a basic flying school in Pima county. Contract for less than \$50,000 by U. S. District Engineer Office, Los Angeles.

**FIRE ALARMS**—American District Telegraph Co., Texas, will install fire alarm systems at airfields in Cochise county. \$50,000 contract by U. S. District Engineer Office, Albuquerque, N.M.

**HOUSES AT GUNNERY BASE**—Daley Corp., 4430 Boundary St., San Diego, will construct additional temporary housing facilities at a gunnery base in Maricopa county. Contract for less than \$100,000 by U. S. District Engineer Office, Los Angeles.

## CALIFORNIA

**A C AND ORDNANCE MAGAZINES**—W. J. Hunter, 660 Heliotrope Drive, Los Angeles, will construct an A C and Ordnance magazine at an air depot in San Bernardino county. Contract by U. S. District Engineer Office, Los Angeles.

**THEATER**—Means and Honer, 105 East Third St., Santa Ana, will build a theater at an approximate cost of \$100,000 at an airfield in Riverside county. Contract by U. S. Engineer, Los Angeles.

**CAMOUFLAGE PAINTING**—Foster & Kleiser Co., 1675 Eddy St., San Francisco, will do camouflage painting at a location in Northern California. Contract by U. S. Engineer Office, San Francisco.

**MESS HALL**—A. J. Gibson, 12121 Foothill Blvd., San Fernando, will construct a civilian mess hall at a bombing range in Kern county. Contract for less than \$50,000 by U. S. District Engineer Regional Office, San Bernardino.

**TIMBER WHARF**—Case Construction Co., San Pedro, will construct a timber wharf and appurtenances at a fort in San Diego county. The contract for less than \$100,000 by U. S. District Engineer Office, Los Angeles.

**HOSPITAL BUILDINGS**—Brunzell Construction Co., 3104 Greenfield Ave., will construct hospital buildings in Riverside county. Contract for over \$100,000 awarded by U. S. District Engineer Office, Los Angeles.

**CLASSIFICATION AND TRANSIT SHEDS**—Cahill Bros., 206 Sansome St., and Ben C. Gerwick, Inc., 112 Market St., San Francisco, have been awarded negotiated contracts for the construction of classification and transit sheds in the San Francisco Bay area. Contract by U. S. Army Engineer Office, San Francisco.

**RECLAMATION BUILDING**—Guy E. Hall, 1526 - 30th St., Bakersfield, has been awarded a contract by the U. S. Army Engineers, Sacramento, for construction of a reclamation building at an airfield in Northern California.

**STEAM DISTRIBUTION**—Kenneth Fraser, 1452 No. Lake, Pasadena, will construct a steam distribution system and fuel oil storage facilities at an air depot in San Bernardino county to cost in excess of \$500,000. Contract by U. S. District Engineer Regional Office.

**REPAIR SHOP**—Bennett & Stevens, 35 No. Raymond Ave., Pasadena, will construct an ordnance repair shop and relocation of ordnance warehouse and utilities at an army camp in San Luis Obispo county. The \$100,000 contract awarded by U. S. District Engineer Office, Los Angeles.

**OIL BUNKERING SYSTEM**—Cory & Joslin, Inc., 50 Hawthorne St., San Francisco, have been awarded a negotiated contract by the U. S. Army Engineer Office, San Francisco, for construction of an oil bunkering system at a location in the San Francisco Bay area.

**MISCELLANEOUS CONSTRUCTION**—Owl Truck & Materials Co., 420 So. Alameda St., Compton, has been awarded a contract by the U. S. Engineer Office, Sacramento, for miscellaneous construction in Kings county to cost between \$500,000 and \$1,000,000.

**PLAN MACHINE SHOP**—General Engineering & Drydock Co., Filbert and Sansome streets, San Francisco, are planning to build a machine shop on Battery and Union which will cost approximately \$150,000.

**GRAPHITE MINE**—James Bonner is reopening the old graphite mine in the northeasterly sector of the Verdugo Hills at the south end of Lowell Ave. Property, which is near Los Angeles, has a mill on it which formerly produced a grade of graphite for paint stock and foundry facings.

**PLANE CO. INCORPORATED**—Joyce-Woods Manufacturing Co. has filed articles of incorporation. This \$500,000 engineering concern operating at 8442 Otis St., South Gate, will make equipment and parts for military planes.

**MACHINERY PARTS**—Machine Works, Inc., 1756 Berkeley St., Santa Monica, will manufacture small parts for various machines needed by both the Army and Navy. Link Anderson heads the organization.

**BUILDING TUGS**—Standard Shipbuilding Corp., Long Beach, Calif., are doing preliminary work on their new yard which will be constructed in San Pedro. They have a contract from the U. S. Maritime Commission for the construction of six ocean-going tugs.

**STIRRUP PUMPS**—James Graham Mfg. Co., Newark, is one of six firms designated to manufacture 2,258,000 stirrup pumps at an approximate cost of \$4,500,000. The pumps are to supplement \$65,000,000 worth of fire fighting equipment to be supplied in target areas by the Office of Civilian Defense.

**OPTION ON CANNING PROPERTIES**—Hunt Brothers Packing Co. has leased with option to purchase the canning properties, machinery, equipment and brand of the Val Vita Food Products, Inc., Fullerton. C. W. Froehlich has been appointed general manager of this unit.

**UTILITIES, BUILDINGS**—Calowell Construction Co., 1835 East Wardlow Road, Long Beach, will construct buildings and utilities in San Bernardino county. Contract for less than \$500,000 by U. S. District Engineer Office, Los Angeles.

**MORE TO MENASCO**—Menasco Manufacturing Co., Burbank, will build additional facilities at their plant. The Defense Plant Corp. has authorized an increase of more than \$150,000 in their contract, bringing total commitment to \$3,300,000.

**DUCT WORK**—Johnson, Inc., P. O. Box 781, San Bernardino, has been awarded a million-dollar contract by the U. S. District Engineer Regional Office, San Bernardino, for duct work under streets and other miscellaneous work appurtenant to street paving at an air depot in San Bernardino county.

**REGIMENTAL DISPENSARY**—Furbass-Heinz Construction Co., 1342 "E" St., San Diego, will construct a regimental dispensary and utilities at an army camp in San Diego county. Contract for \$50,000 by U. S. District Engineer Office, Los Angeles.

**ADMINISTRATION BUILDING**—D. E. Metzger, 3045 Gilroy St., Los Angeles, will construct an administration building in Los Angeles county. U. S. District Engineer Office, Los Angeles, awarded the \$50,000 contract.

**GAS STORAGE**—Brizard, Inc., Arcata, will construct gasoline storage facilities at an airport in Northern California. U. S. Army Engineer Office, San Francisco, announced the award of the negotiated contract.

**OVERHEAD CROSSING**—M. H. Golden, 3489 Noell, San Diego, will construct an overhead crossing on Harbor Drive across Switzer Canyon Creek and tracks of Atchison, Topeka & Santa Fe Railway in San Diego county. National Defense contract for \$329,332.60 awarded by Public Works department.

**COOLING SYSTEM**—J. Herman Co., 1349 East Vernon Ave., Los Angeles, will construct evaporative cooling systems, Units "M" and "N" at a general hospital in Riverside county. Contract for less than \$50,000 by U. S. District Engineer Regional Office.

**HOUSING FOR A-A BATTALIONS**—O'Neil & Hedberg, 852 So. Robertson Blvd., Los Angeles, have been awarded a \$500,000 contract by the U. S. District Engineer Regional Office for construction of housing for anti-aircraft battalions in San Bernardino county.

**FLATTOPPING**—Elwood E. Schwenk, 14329 Millbrook Drive, Sherman Oaks, will do flattopping in Los Angeles county. Contract for \$50,000 by U. S. District Engineer Office, Los Angeles.

**BRICK WAREHOUSE**—J. O. Oltmans, 810 East 18th St., Los Angeles, has been awarded a contract for the construction of a brick warehouse in Fontana for the Kaiser Co., Inc., Oakland.

**INCINERATOR**—Harold C. Geyer, 787 Munras Ave., Monterey, will install a one to five ton incinerator at a military location in Central California. Contract awarded by U. S. Army Engineers, San Francisco.

## COLORADO

**1,000-TON MILL**—Western Machinery Co. and Western Knapp Engineering Co., 1655 Blake St., Denver, have been awarded a contract for the construction of a 1,000-ton mill for handling lead-zinc ores at Leadville for the Ore & Chemical Co., New York. Approximate cost will be \$500,000.

**FILTER PLANT**—Dutton, Kendall & Hunt, 3600 East 46th Ave., Denver, have been awarded a contract by the Colorado Springs City Council for the construction of a filter plant to cost \$126,059.29.

**CONCENTRATION CAMP**—P. O. Honnen, Kiewit & Condon, Colorado Springs, have been awarded a negotiated contract for less than \$1,000,000 by the U. S. District Engineer Office, Denver, for the construction of a concentration camp for 3,000 inmates at Colorado Springs.

**RUNWAY EXTENSION**—Brown Construction Co., Colorado Springs, has been awarded a \$500,000 contract by the U. S. District Engineer Office for construction of runway extension in Pueblo county.

**SEVEN HOSPITALS**—Brown-Schrepferman Co., 240 Washington St., Denver, has been awarded a \$50,000 contract by the U. S. District Engineer Office, Denver, for the construction of seven hospital buildings in the Denver vicinity.

**PLANS FOR WAAC**—U. S. District Engineer Office, Railway Exchange Building, Denver, is preparing plans for construction of mess hall, hospital building and barracks remodeling for WAAC in Denver.

## IDAHO

**DEHYDRATING PLANT**—Marvin A. Vanderwall of Chicago will open a dehydrating plant in Blackfoot. The industry will be given over chiefly to the dehydration of potatoes, but other vegetables will be processed in the off season. Approximately 200 persons will be employed.

**SPILLWAY ALTERATIONS**—Durite Co., Chicago, Ill., has been awarded a negotiated contract by the U. S. Bureau of Reclamation, Denver, for alterations to the spillway at American Falls Dam.

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## THE WEST ON ITS WAY

**TO ERECT BUILDINGS**—Vernon Bros. Co., Boise, will erect buildings in Power county. Contract of between \$200,000 and \$250,000 by U. S. Engineer Office, Portland.

**BUILDINGS**—J. O. Jordan & Son, Boise, will construct buildings at a cost of \$135,000 in Ada county. Contract by U. S. Engineer Office, Portland.

**FISHING EQUIPMENT**—The Glen L. Evans Fly Factory, Caldwell, has received a contract to manufacture 60,000 special flies and 20,000 nylon leaders for use by soldiers in the Aleutian Islands.

**FRAME BUILDINGS**—H. J. McNeel, Caldwell, will construct temporary frame buildings at a military site in Ada county. Contract for less than \$500,000 awarded by the U. S. District Engineer Office, Portland, Ore.

**MILITARY BUILDINGS**—Vernon Bros. Co., Boise, have been awarded a contract for about \$250,000 by the U. S. Army Engineers, Portland, for the construction of buildings at a military site in Power county.

**OIL SYSTEM**—Morrison-Knudsen Co., Boise, and J. W. Brennan, Pocatello, have been awarded a contract by the U. S. Engineer Office, Portland, for a lubricating and oil system in Power county.

**44 BUILDINGS**—H. J. McNeel, Caldwell, will construct 44 miscellaneous modified theater of operation-type buildings with necessary utilities. Contract in excess of \$100,000 by U. S. District Engineer Office, Portland.

## MONTANA

**MOVING LUMBER MILL**—Jim Brown, Jr., who was the successful bidder for the Cabinet forest timber on Cherry creek involving about 10,000,000 B.M. feet, is moving the Sand Creek sawmill near Sandpoint to Thompson Falls. Previously owned by the Pack River Lumber Co., the new company will operate under the firm name of Thompson Falls Lumber Co.

**FLIGHT STRIP**—Barnard-Curtis Co., Minneapolis, will build a flight strip at Dell in Beaverhead county at a cost of \$155,057. Contract by Montana State Highway Commission.

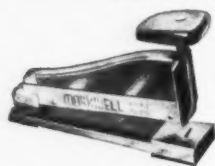
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**WOODEN TANKS**—Hugo Aaronson, Santa Rita, has been awarded a \$50,000 contract for the construction of prefabricated wooden tanks and steel substructures at a military site in Glacier county by U. S. Army Engineers, Fort Peck.

**AWARDS SUB-CONTRACTS**—Central California Construction Co., 230 California St., San Francisco, awarded two subcontracts as follows: Rowe Electric Co., Great Falls, for electric wiring; Victory Construction Co., Great Falls, for concrete work. Construction of gasoline fueling and oil storage system is under way at a military site in Cascade county.

## NEVADA

**PIG IRON PLANT**—The Lewis-Yorston Iron and Steel Co. has been organized at Fallon, to operate an iron deposit in Churchill county. As soon as equipment can be assembled, production will be started, and the company hopes to be able to install a pig iron plant.

**ARMY GUNNERY ROADS**—Gibbons and Reed Co., 259 West Third South, Salt Lake City, was awarded contract under supplemental agreement to construct access roads and parking areas at an army gunnery school in Clark county at a cost of less than \$50,000.

**GUNNERY TRAINER**—O. J. Scherer Co., 209 Third St., So., Las Vegas, will construct a two-waller gunnery trainer building at an air force flexible gunnery school in Clark county. Contract by U. S. District Engineer Regional Office, San Bernardino, Calif.

**FIVE-ROOM HOUSES**—Forest Schidler, 324 Fremont St., Las Vegas, has started work on the construction of 72 five-room houses to cost \$300,000.

**SCHHEELITE TREATMENT**—United Tungsten Mines, Ltd., plan to construct a mill for the treatment of scheelite from the company's claims in Southern Pershing county.

**STOCKADE**—L. O. Waddell, Box 1048, Las Vegas, granted a \$50,000 contract by the U. S. District Engineer Regional Office, San Bernardino, for construction of stockade facilities at an army camp in Clark county.

**TREATING ORES**—The Defense Plant Corp. has allocated \$341,000 for the erection of a mill in the Goodsprings area near Las Vegas for the treatment of zinc, copper and vanadium ores.

**INSULATING AND HEATING**—Modern Builders Construction Co., Inc., 2812 Long Beach Blvd., Long Beach, Calif., has been awarded a \$50,000 contract by the U. S. District Engineer Office, Los Angeles, for insulation and heating of existing buildings at a bombing and gunnery range in Nye county.

**CONCENTRATING PLANT**—Tungsten Associated Mines, Los Angeles, are planning construction of a two-ton concentrating plant about 50 miles north of Pioche. James Pollard is in charge of the work.

**AMMUNITION DEPOT**—Dinwiddie Construction Co., Inc., 220 Montgomery St., and Monson Bros., 475 Sixth St., San Francisco, have been awarded a supplemental agreement by the Bureau of Yards & Docks, Navy Dept., Washington, D.C., for construction of additional facilities at the Naval Ammunition Depot, Hawthorne. Contract for \$8,896,500.

**TELEPHONE BUILDING**—H. O. Bauerle, 8948 Ellis Ave., Los Angeles, has been awarded a negotiated contract by the U. S. District Engineer Office, Los Angeles, for the construction of a telephone and telegraph building at a bombing and gunnery range in Nye county.

**MOVING BASE**—Gibbons & Reed Co., 259 West Third South St., Salt Lake City, Utah, has been awarded a \$50,000 contract by U. S. District Engineer Regional Office, San Bernardino, for additions to moving base at shotgun range at an Air Force Flexible Gunnery School in Clark county.

## NEW MEXICO

**AUXILIARY LANDING FIELDS**—Brown Bros., Albuquerque, will construct a \$600,000 auxiliary landing field in Luma county. Contract by U. S. District Engineer Office, Albuquerque.

**BASE OPERATIONS**—Harold W. Balay, Albuquerque, will construct a base operations building incinerator and charging platform at an airfield in Lea county. Contract by U. S. District Engineer Office, Albuquerque.

**RAILROAD AT AIRFIELD**—Patrick & Prestridge, Albuquerque, will construct railroads at an airfield in Curry county. Contract for less than \$100,000 by U. S. Engineers Office, Albuquerque.

**LANDING FIELD**—Reynolds & Sutton, Tyler, Texas, will construct landing field facilities at an airfield in Lea county to cost less than \$1,000,000. Contract by U. S. Engineer Office, Albuquerque.

**DUST TREATMENT**—Rock Roads Construction Co., Chicago, Ill., has been awarded a contract by the U. S. District Engineer Office, Albuquerque.



## THE WEST ON ITS WAY

querque, in an amount less than \$1,000,000 for dust palliative treatment at an airfield in Eddy county.

**ARMY HOUSING**—S. V. Patrick, Albuquerque, will construct temporary army housing facilities in Bernalillo, Chaves and Eddy counties. Contract for \$500,000 by U. S. District Engineer Office, Albuquerque.

**BOMBING RANGES**—Charles C. Terry, Deming, has been awarded a negotiated contract for \$50,000 by U. S. District Engineer Office, Albuquerque, for construction of bombing ranges at an airfield in Luna county.

**ROADS AT AIRFIELD**—Allison, Armstrong & Thygesen, Roswell, have been awarded a contract for \$1,000,000 for the construction of airfield facilities, roads and drainage at an air force school in De Baca county.

**LIVING QUARTERS**—E. S. McKittrick Co., Inc., 7839 Santa Fe Ave., Huntington Park, Calif., will construct civilian war housing facilities at an airfield in Eddy county. Contract for less than \$50,000 by U. S. District Engineer Office, Albuquerque.

## OREGON

**FERRY TERMINAL**—Oregon Shipbuilding Corp., Portland, are building a ferry terminal building at S.W. Front Ave., between the Burnside and Steel bridges to alleviate the transportation problem of the Swan Island and Oregon shipyard employees.

**VANADIUM DEPOSIT**—The State Department of Geology and Mineral has disclosed the discovery of vanadium in southwestern Oregon near the center of Curry county. It is estimated that a minimum of 300,000 to 400,000 tons of ore is contained in this deposit.

**GARAGE**—Tri-State Construction Co., 1812 N.E. 40th Ave., Portland, will construct a garage building at a military site in Umatilla county. Contract for between \$50,000 and \$100,000 by U. S. Army Engineers, Portland.

**FUELING SYSTEM**—DeLuca & Son, Inc., 1745 Filbert St., San Francisco, will construct a gasoline storage and fueling system at a military site in Benton county. Contract for between \$50,000 and \$100,000 by U. S. Army Engineers, Portland.

**MANUFACTURING SPRINKLERS**—Rushlight Automatic Sprinkler Co., Portland, has purchased ground for the construction of a building to be used for the manufacture and fabricating of parts for sprinkler systems.

**AIR BASE**—An appropriation of \$800,000 has been approved for construction of an air base on the Lincoln county coast across Yaquina Bay from Newport, according to Senator Charles McNary.

**LIVING QUARTERS**—George H. Buckler Co., Portland, have started construction on a housing project in the Mock's Bottom area for the convenience of the Henry Kaiser Co. employees. Cost of project is estimated at \$2,750,000.

**MILITARY BUILDINGS**—Halvorson Construction Co., Box 662, Billings, Mont., has been awarded a contract by the U. S. Army Engineers, Portland, for the construction of buildings at a military site in Benton county. Cost will be about \$90,000.

**LIGHTING SYSTEM**—Max J. Kuney Co., 120 Ralph St., Spokane, will install an electric distribution street lighting system at Portland. The cost will be \$80,828. Contract by U. S. Engineers district office, Portland.

**PAINTING**—G. H. Gazeley, Portland, has been awarded a contract for less than \$50,000 by the U. S. Army Engineers, Portland, for painting at a military site in Multnomah county.

**MILITARY BUILDINGS**—Paul N. Odegard, W. C. Smith, L. H. Hoffman and Howard S. Wright, Portland, will construct buildings at a military site in Umatilla county, to cost approximately \$150,000. Contract by Portland office U. S. Army Engineers.

## UTAH

**PAVING APRONS**—V. M. Samuels, Ogden, has been awarded a negotiated contract for less than \$500,000 by the U. S. District Engineer Office, Salt Lake City, for additional concrete paving of aprons at an airfield in Weber county.

**STEEL HANGAR**—Harrison & Dorman, 13 So. and 4 West, Salt Lake City, have been awarded a negotiated contract by the U. S. District Engineer Office, Salt Lake City, in an amount less than \$50,000 for the construction of an addition to a steel hangar at an airfield in Tooele county.

**TECHNICAL FACILITIES**—R. D. Merrill, Helena, Mont., will construct additional housing and technical facilities at an army air base in Tooele county. Contract for less than \$1,000,000 by U. S. District Engineer Office, Salt Lake City.

**HOSPITAL FACILITIES**—R. H. Parr, 206 West 112th St., Los Angeles, has been awarded a negotiated contract by the U. S. District Engineer Office, Salt Lake City, for the construction of hospital facilities at a fort in Salt Lake county, at a cost of \$100,000.

**SURFACED RUNWAYS**—Pacific Rock and Gravel Co., 208 West Eighth St., Los Angeles, Calif., have been awarded a contract for less than \$500,000 by the U. S. District Engineer Office, Salt Lake City, for construction of airfield facilities including the surfacing of runways in Tooele county.

**PAVING ARMY AREA**—J. B. and R. E. Walker, 21 So. Tenth West, Salt Lake City, has been awarded a negotiated contract for less than \$100,000 by U. S. District Engineer Office, Salt Lake City, for surfacing and paving an army area in Weber county.

## WASHINGTON

**PAPER TO SHIPFITTING**—Kraft-St. Regis Paper Co., Tacoma, will convert their facilities to outfitting small steam tugs and army cargo vessels. Pulp production was ordered stopped by the WPB.

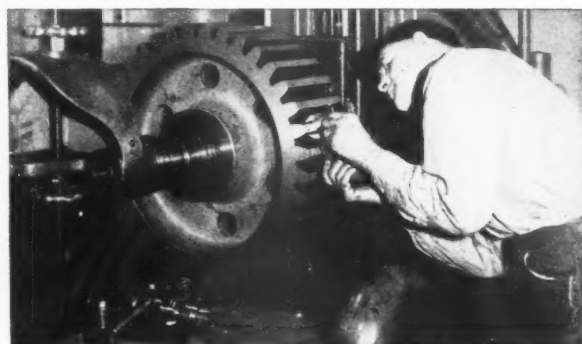
**CHANNEL DREDGING**—Work on the west channel of the Columbia river leading into Ilwaco will be started in the spring. Approximately \$170,000 has been allotted for the work, according to Congressman Martin F. Smith.

**STEEL CAISSON**—Ames Shipbuilding & Drydock Co., Seattle, was awarded a \$350,000 contract by the Bureau of Yards & Docks, Navy Dept., Washington, D.C., for a steel caisson at the Puget Sound Navy Yard.

**DRILLING WELL**—R. C. McClintock, Spokane, has been awarded a contract for less than \$50,000 by the Seattle District office of U. S. Engineers for drilling a well in Grant county.

**PROVIDING EQUIPMENT**—The Stetson-Ross Machine Co., Seattle, will provide construction and equipment for a plant in Washington. Defense Plant Corp. authorized the execution of the contract for the work which will cost in excess of \$250,000.

**WAR DWELLINGS**—Lease & Leigland, Seattle, awarded contract by



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## THE WEST ON ITS WAY

the Bremerton Housing Authority for construction of 250 units of war dwellings in Sheridan Park. Total contract, \$747,500.

**LINE SHAFTS**—Lamb-Grays Harbor Co., Hoquiam, has received a \$1,500,000 contract from the Kaiser Co. for the manufacture of multi-piece line shafts.

**FIVE BUILDINGS**—Hawkins & Armstrong, 5265 N.E. 16th St., Seattle, will construct five buildings at a military site in Spokane county. Contract between \$100,000 and \$500,000 by U. S. Army Engineers.

**CASTINGS COMPANY**—Northwest Steel Castings Co., Bellingham, was organized recently for the production of flanges, gears and similar shipfittings.

**24 BARGES**—Cotton Engineering & Shipbuilding Corp., Port Townsend, has been awarded a contract to construct 24 barges for the U. S. Army Engineers at a cost of \$288,000.

**FOUR ARMY TUGS**—The Puget Sound Boatbuilding Co., Tacoma, has been awarded contracts by the U. S. Army Engineers and the Transport Service for four ocean-going tugs.

**MILITARY HOUSING**—Sullivan, Lynch & Hainsworth, 1822 McGilvra Blvd., Seattle, will construct housing facilities at a military site in Clallam county. Contract for \$50,000 to \$100,000 by U. S. Army Engineers, Seattle.

**POST OFFICE**—Sam Bergeson, Wick & Dahlgren, P. O. Box 25, Tacoma, will construct a post office building at a military site in Spokane county. Contract by U. S. Army Engineers, Seattle, for less than \$50,000.

**LIGHTING SYSTEM**—Sullivan, Lynch and Hainsworth, 1822 McGilvra Blvd., Seattle, will install water, sewer and lighting systems at a military site in Clallam county. Contract for \$50,000 by U. S. Army Engineers, Seattle.

**POST OFFICE BUILDING**—A. W. Johnson, Inc., and Goetz & Brennan, 208 East Pacific, Seattle, will build a post office building at a military site in King county. \$50,000 contract by the Area Engineers, Seattle.

**RESUMES OPERATIONS**—The Kelso Veneer Co., Kelso, will resume full scale operations. They had been making experimental cuts of veneer, and production will be for war construction projects.

**SEWAGE PLANT**—B. H. Sheldon, 1619 Eleventh St., Spokane, will construct a sewage plant at a cost of \$119,000 in Renton. Contract by City of Renton.

## WYOMING

**REFINERY PLANT**—Fluor Corp., Ltd., 2500 Atlantic Blvd., Los Angeles, and N. L. Edson, Cheyenne, are in charge of the construction of a 100-octane refinery plant at Cheyenne. Amount of contract awarded by Defense Plant Corp. is over \$1,000,000.

## OPPORTUNITY SECTION . . .

Priorities regulations have made it practically impossible to secure new machinery for industrial operations unless a plant is doing 100 per cent work on war projects. Even then, long delays are in prospect. The government is urging full use of existing machinery. Listed here are "machinery opportunities" immediately available here on the Pacific Coast.

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1 HP 1800 RPM—220/440 Volt, Type KR Ball Bearing Sterling 7 to 11% Slip.  
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15 HP 1800—220/440 Fairbanks Morse Type HJ 50 HP 1800—220/440 Type HJ Fairbanks Morse Ball Bearing Line Start  
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15 HP 1800—220/440 Ball Bearing Sterling  
25 HP 900—220/440 U. S. Ball Bearing

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- 2—2 K. V. A. Westinghouse
- 4—3 K. V. A. Westinghouse
- 4—5 K. V. A. Westinghouse
- 3—10 K. V. A. General Electric

#### Single Phase, 50 or 60 Cycle 2200 to 440/220 Volts

- 1—7 1/2 K. V. A. Westinghouse
- 3—10 K. V. A. General Electric

#### Single Phase, 50 or 60 Cycle 440 to 220/110 Volts

- 4—1 1/2 K. V. A. Westinghouse
- 8—3 K. V. A. Westinghouse
- 12—5 K. V. A. Westinghouse
- 4—7 1/2 K. V. A. Westinghouse
- 3—10 K. V. A. Westinghouse
- 1—37 1/2 K. V. A. Westinghouse

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Design - Build - Repair  
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### MACHINERY SALE MOTORS

- 1—260 H.P. Synchronous G.E. 225 RPM, 2200 volts, 210 KVA.
- 2—250 H.P. Westinghouse, Type CS, 290 RPM, 2200 volts.
- 1—200 H.P. Slip Ring G.E. 600 RPM, 440 volt motor.
- 1—200 H.P. G.E. Type I, 600 RPM, 440 volts.
- 1—200 H.P. G.E. 1800 RPM, 440 volt motor.
- 1—150 H.P. Westinghouse, Type CS, 1800 RPM, 440 volts.
- 1—100 H.P. Slip Ring, G.E., 720 RPM, 440 volts.
- 1—62 1/2-ft. 25 1/2-inch Double Leather Belt.
- 1—60 H.P. G.E. Type I, 1800 RPM, 440 volts.
- 1—50 H.P. Vertical Fairbanks Morse, 1200 RPM, 220 volts, solid shaft.
- 1—35 H.P. Crocker Wheeler, 1200 RPM, 220 volts.
- 1—25 H.P. G.E. Type I, 600 RPM, 220 volt motor.
- 1—10 to 30 H.P. Slip Ring, Westinghouse, Type MW, 860 RPM, 440 volts.

### GENERATORS, BLOWERS, WATER PUMPS

- 1—600 Amp, 7500 volt, Westinghouse Type F3 oil circuit breaker.
- 1—300 H.P. Triumph Water Wheel with governor, 50 ft. head.
- 1—200 KW. Westinghouse Alternating Current Generator, 900 RPM, 440 volts, 60 cycle, 3 phase.
- 1—150 H.P. Fairbanks Morse, Type B, 720 RPM, 440 volts.
- 1—150 H.P. Westinghouse Type CS, 720 RPM, 2200 volts.
- 1—No. 70 ILG Blower, 17,430 CFM, direct to 6 H.P. 340 RPM, 3 phase motor.
- 2—75 KVA Transformers, G.E. Type H, 6600 to 120/240/480 volts, 60 cycle.
- 1—50 H.P. Single Drum Mine Hoist.
- 1—45 K.W. Alternating Current Generator, U.S. Electric, 1200 RPM, 440 volts, 3 phase.

### RELIABLE ELECTRIC WORKS

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# YOURS FOR THE ASKING

1151

• **Dehydrator**—A twelve-page bulletin lists some of the products which have been dried successfully in this new unit. Diagrams of the system are shown, method of operation explained and simplicity of control pointed out. Maximum mixing between product and heated air is accomplished by a unique centrifugal-type spray head. Product being dehydrated is pumped into the concentrator by a sanitary pump. Discharge from concentrator is pumped to top of drying chamber by a second pump and discharged into the chamber through a centrifugal spray head into the heated air which is whirling at high velocity. A quick, thorough and uniform mixture results, causing moisture to be evaporated from all particles of the product uniformly and almost instantaneously. *Drying and Concentrating Co., 332 So. Michigan Ave., Chicago, Ill.*

1152

• **No Rust Paints**—Catalogue contains directions for proper application of rust preventive coatings, color chips which illustrate the variety of products available and explanations of where and how these materials may be used to insure maximum protection. Also included are descriptions of special coatings designed to inhibit the corrosive action of fumes, humidity, and brine, and special applications to be used where wide variation in temperature requires unusual elasticity. *Rust-Oleum Paint Corp., 2425 Oakton St., Evanston, Ill.*

1153

• **Heavy-Duty Truck**—Ten thousand-pound capacity crane truck designed to handle the heavier unit loads occasioned by war production program. According to the manufacturer, the efficient operation of this crane is due, in part, to the reduction of dead weight made possible by an exclusive design. The hoist units are positioned so they are available as counterweight, resulting in lower gross weight in spite of heavier construction throughout. Specifications and dimensions given in Bulletin 1612. *The Baker Industrial Truck Div., Baker-Raulang Co., 2168 West 25th St., Cleveland, Ohio.*

1154

• **Glycerine Substitute**—Folder outlines the value of X-Pando Pipe Joint Compound as a substitute for litharge and glycerine as well as an improvement for use in ending pipe leaks. Compound which expands as it sets is offered for use in ammonia, brine, oxygen and freon lines, and works as a seal for all types of joints in all types of metal pipe. *The X-Pando Corp., 43-15 Thirty-sixth St., Long Island City, N.Y.*

1155

• **Seam Welders**—Bulletin #01WI covers design and operating features of light, medium and heavy duty welders which are available in three styles. Diagrams of the three types as well as illustrations of typical applications are included along with specification tables and drawings showing major dimensions of the standardized machines. *Progressive Welder Co., 3050 East Outer Drive, Detroit, Mich.*

1156

• **Scoop Truck**—Designed to increase the efficiency of a man unloading coal, grain and similar bulk weight from the ends of box cars to the car door, wagon, bin or hopper. A large scoop on wheels, drawn from a single sheet of No. 10 gauge steel, pressed out like an automom-

bile body, has corrugation in the middle which forms at once a housing for the wheels, a seat for the handles and a stiffener to the bottom of the bowl. *The J. J. Ross Mill Furnishing Co., 2208 First Ave., So., Seattle, Wash.*

1157

• **Motor-Mica**—Bulletin shows operations where Motor-Mica may be used to help solve perplexing lubrication problems often found in stamping, drawing, turning, drilling, threading, boring and similar operations. Detailed mixing instructions are given in the 8½ by 11 inch, two-color folder. *Scientific Lubricants Co., Dept. T, 3462 No. Clark St., Chicago, Ill.*

1158

• **Industrial Signaling**—"Guide to Good Signaling" explains how to select signals which will contrast with surrounding noises in volume, pitch and tone. Subjects covered include: The

You owe it to yourself to keep posted—only the efficient business survives under the strain and pressure of the war effort. Literature listed in these columns may be just the answer to your need for greater production, substitute materials or knowledge of how to care for your equipment. Just drop a note to Western Industry, 503 Market St., San Francisco, and copies will be forwarded to you. If you do not use business letterheads, please name your company affiliation.

Measurement of Sound; How to Select Contrasting Tone Signals; How to Distribute Signal Sounds Efficiently with Least Expense and How to Meet Changing Conditions in a Plant. *Schwarze Electric Co., Adrian, Mich.*

1159

• **Belt Surfacing**—Twenty-four page booklet entitled "Wet-Dry Belt Surfacing" reveals a new way of doing things to get quick results and explains the factors that enable this new method. It points out the departments in which belt surfacing saves time, money and manpower in relief, release and supplement of heavy machine tools and details. Includes descriptions and illustrations. *Porter-Cable Machine Co., 1714 No. Salina St., Syracuse, N.Y.*

1160

• **Superfinishing Machines**—Capable of developing an extremely accurate and fine finish of 2-5 micro-inches on cylindrical work such as shafts used in aircraft engines where surface scratches and defects must be eliminated. Also used to eliminate defects not usually visible to the eye, but injurious to bearings such as grinder food spirals, chatter marks, grinder flats and other defects caused by machine tool inaccuracies. Bulletin with complete information may be had from *The Foster Division of the International Machine Corp., Elkhart, Ind.*

1161

• **Business Reports**—Wartime problems confronting business management form the basis for a new series of reports made available. They cover: "What is Business Engineering?" No. 129; "Making Money in the Restaurant Business," No. 130; "The Structure of Business," No. 131; "Expense Control, The Secret to Department Store Profit," No. 132; "Club Management as a Business," No. 133. Also available is the Business Analyzer, a new rapid method of ascertaining vital ratios which control the profit yield in business. *George S. May Business Foundation, 2600 North Shore Ave., Chicago, Ill.*

1162

• **Wood Shelving**—Adjustable shelving, essential for saving floor space in wartime industries, now being made in wood in open and closed types. Finished with green-tinted preservative coating which reduces moisture absorption. Easy to set up. Special features include dividers, bin fronts, adjustable shelves and shelf boxes. Complete illustrations and specifications contained in Bulletin No. 1705. *Lyon Metal Products, Inc., 3127 Clark St., Aurora, Ill.*

1163

• **Lamp Ballast**—Designed to provide equalized and balanced secondary voltage to each of the four 100-watt lamps to which it supplies power. Core and coil elements of the ballast are said to be impregnated and compounded to minimize normal resonant vibration. Available for use on industrial lighting orders or replacements carrying high priority ratings. Described in detail in Bulletin 157. *Acme Electric & Mfg. Co., Cuba, N.Y.*

1164

• **Mining Equipment**—A handy, pocket-sized booklet containing 72 illustrations and data on rock drills, detachable bits, reconditioning equipment, hose lines, hoists, pumps and air compressors. Language is entirely non-technical, and hints may help save time and labor. Form 2724. *Ingersoll-Rand Co., 11 Broadway, New York, N. Y.*

1165

• **Speedriver Kit**—Features a wrench type of tip holder, and includes two sizes of Phillips screwdriver tips, two sizes of Reed Print screwdriver tips, two sizes of standard screwdriver tips, a spiral burring tip and two socket wrench tips. The entire kit can be slipped into a mechanic's pocket. Descriptive literature available from *Aircraft Tools, Inc., 750 East Gage Ave., Los Angeles, Calif.*

1166

• **Inlet Blowers**—Twelve-page folder No. 65 covers general purpose single inlet blowers for supplying air or for exhausting purposes, and contains detailed performance data, dimensions and other pertinent information. This line of blowers, both direct and belt driven, embraces three different series, a wide range of wheel diameters and eight angles of discharge. *The Lau Blower Co., 2001 Home Ave., Dayton, Ohio.*

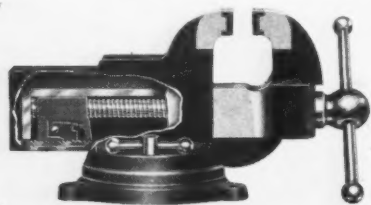
1167

• **Clean Lathes**—"Keep Your Lathe Clean" is the subject of a 16-page bulletin which shows how keeping lathes clean will help increase production, reduce scrap and lengthen the life of the lathe. Nineteen illustrations supplement the text matter to describe the best methods of cleaning various units. Importance of periodical cleaning of all machine tools is explained by the damage which can be caused by accumulated dirt and chips. *South Bend Lathe Works, Dept. W2, South Bend, Ind.*



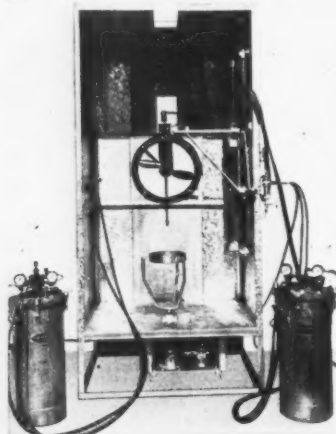
# THE SHOWCASE

• **TIME-SAVING VISES**—Quick-action principle involves the use of a patented nut and pawl which makes it possible to open and shut vise like a drawer and to lock it in any desired position with only two turns



of the handle. When pawl is engaged on the steel rack, it is in working position and ready to grip the part. Two left turns of handle disengage pawl and permit opening and closing the jaws freely to fit the part to be gripped. All working parts are steel, and castings are semi-steel for added strength. *Pacific Vise Co., 6331 Hollywood Blvd., Los Angeles, Calif.*

• **SHELL SPRAYER**—A special unit for spray coating eight-inch shells in a vertical position. Inside coating is done with a semi-automatic spray gun fitted with a long extension nozzle. Outside is sprayed manually by the same operator who handles



inside coating operation. Shell is rotated by an air-motored tripod with a ring at the top to protect the driving band from paint. Production rate is approximately 25 pieces an hour according to *Eclipse Air Brush Co., Inc., 390 Park Ave., Newark, N.J.*

• **HOSE CLAMP**—Fewer parts, simplicity of operation without special tools and uniformity of pressure are the advantages of a new aircraft and industrial hose clamp. Through a unique wrap-around, self-locking arrangement, the hose clamp employs

no bolts, nuts, binding screws or pivots. May be installed by hand without tools. Stays locked with uniform pressure all around. Provision is made for safety wiring, but laboratory and service tests indicate wiring is unnecessary, according to *Huntington Precision Products, Div. Adel Precision Products Corp., Huntington, W. Va.*

• **PLASTIC RESPIRATOR**—Known as the Clear Vue Dustfoe Respirator, this product uses no critical materials. Both the facepiece and the filter housing are of transparent plastic which enables the operator



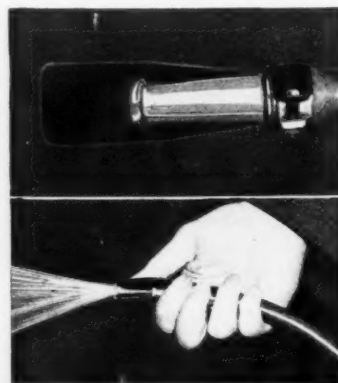
to make a visual check of the filter while the respirator is in use. Facepiece conforms readily to any facial contour, employing the U. S. Army gas mask type exhalation valve for low breathing resistance. *B. F. McDonald Co., 1248 So. Hope St., Los Angeles, Calif.*

• **SKIN CREAM**—Applied before starting to work, and vanishes as soon as it's on. Leaves an invisible glove which protects the hands from grease, paint, dust, printer's ink, metal polish, yet washes off in soap and water. Also protects the skin from materials which cause industrial skin trouble, according to the manufacturer, *Mitts Mfg. Co., 367 East 45th St., Brooklyn, N. Y.*

• **TANK LININGS**—Resists nitric, hydrofluoric and other powerful acids at elevated temperatures, and is immune to caustics. Alkacite, Type HM-A1, is applied in a seamless manner. Possesses unusual resistance to oxidizing reagents and can be used

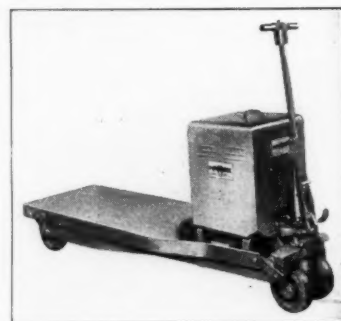
at boiling temperatures according to *Protective Coatings, Inc., P. O. Box 56W1, Strathmoor Station, Detroit, Mich.*

• **EXTINGUISHER ATTACHMENT**—A permanent "thumb spray" nozzle attachment made of spring steel with a deflector edge which influences the range and distribution of the spray for maximum effectiveness. This safety device is a constant reminder to the operator to use a spray on certain industrial fires which can be approached within six or eight feet or to



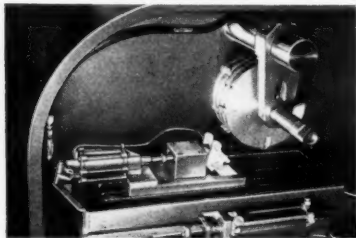
speed the burning and disposal of magnesium bomb. The normally solid stream is converted into a spray by applying pressure with the thumb at the end of the attachment. Device is attached by sliding the welded clamp over the hose and ferrule of the extinguisher. Nut and bolt holds it permanently in position. *Pyrene Mfg. Co., 560 Belmont Ave., Newark, New Jersey.*

• **LIFT TRUCK**—The PowerOx lifts loads by a series of vertical handle strokes. When the load is raised to the desired height, electric power is transmitted to the two rear drive wheels by means of a "twist of the wrists." Net weight of truck is less than



the smallest electric trucks, according to the manufacturer, offering a new means of transportation; yet, has a capacity of 4,000 pounds. Two-thirds of the load always is carried on the rear wheels, which are as large in diameter as the truck is high in its lowered position. Has 11 exclusive features according to *Barrett-Cravens Co., 3255 West Thirtieth St., Chicago, Ill.*

• **AIR MOTORS**—Complete with universal integral valves for use wherever powerful reciprocating motion is required. As an auxiliary for application to machine tools, these motors save time in opening and closing vises and holding fixtures, operating clutches and latches, moving work tools, and similar operations. Another important function is the use of these



motors as prime movers for supplying fractional horsepower for such operations as tube flaring, punching, broaching, stamping, die casting and bushing insertion. *Smith-Johnson Corp., 623 East 12th St., Los Angeles, Calif.*

• **CLEANING COMPOUND** — Fused chemical which does not burn. Harmless to hands and clothes. Cleans paint without rubbing, dissolves rust, grease and weather corrosion on glass, eliminates acids and caustics. Makes greasy, oily cement and wood floors look like new. Disinfects as it cleans. *Trojan Products & Mfg. Co., 3130 So. Wabash Ave., Chicago, Ill.*

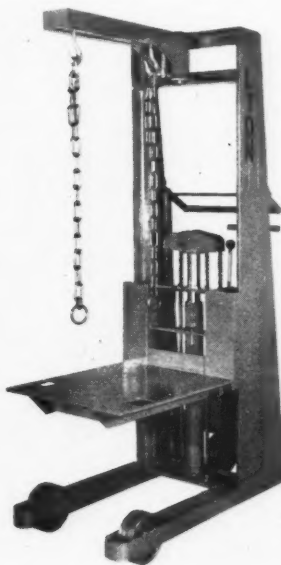
• **EYESHIELD**—Easily attached to any of the popular types of helmets, it is designed to protect the welder's eyes during operations other than welding. It tends to eliminate reflected glare, affords wide vision, and protects the eyes from flying scale from



chipping hammer or wire brush. Loading of welding holder, set-up work and other details may be accomplished without raising the visor. *Jackson Products, 3265 Wight Street, Detroit, Michigan.*

• **SEARCHLIGHT**—Incandescent searchlight especially designed for protective illumination of war industry. Parabolic mirror, 19 inches in diameter, projects light from a 2,000-watt globe in a powerful compact beam. "Pilot house" control enables guard to turn and tilt the beam from a place of safety well below the lamp. *The Otto K. Olesen Co., 1560 Vine St., Hollywood, Calif.*

• **STACKING TRUCK**—Has the following applications: 1) Lifting and stacking barrels and other materials, and lifting skid loads of dies. 2) With platform removed and boom attached to carriage frame, truck can be used as a crane to pick dies up from



the floor and place them on skids. 3) With the boom in position on top of frame and the platform in position on the truck carriage (as shown in illustration), with skid and die in elevated position, the truck can be used for separating dies. This is accomplished by fastening the chains to upper half of die, and lowering platform. *Lyon-Raymond Corporation, 1088 Madison St., Greene, N.Y.*



• **ARC ETCHING**—An all-purpose production etching machine which etches hardened parts without burr, and handles either light or deep etching as desired, simply by the turn of a dial. Designed for either accurate, rapid, high production etching or for individual marking of soft to hard metals. Requires no acid, no pressure, stress or strain. Etching is done by a tiny tungsten wire electrode oscillated vertically 120 times per second by a magnetic motor. Operator needs only to trace along the lines of the master with one hand, and with the other, hold the feed button down. *George Gorton Machine Co., Racine, Wisc.*

• **FLOW GUN**—Designed for caulking, cementing and other flowing operations where plastic materials such as crack fillers, sealing compounds and heavy paints are used. Particularly useful in doping and cementing fabric parts of aircraft. Chief advantages are less restriction to flow of material and greater ease of handling.



Small, lightweight, well-balanced, it fits the hand comfortably and is operated easily. *The Devilbiss Company, 300 Phillips Ave., Toledo, Ohio.*

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## Aircraft Engineers

• Society of Aircraft Industrial Engineers has been organized in southern California to provide aircraft engineers an organization through which to exchange ideas for improving production methods and designs. It is the hope of the founders that it will become in the future a nation-wide organization. Officers are: president, C. C. Shafer, Vultee; vice-president, Lloyd E. Marsh, North American; secretary, William Harker, Vultee; treasurer, Dick R. Lynch, Lockheed. An office has been opened in the Bendix Bldg., Los Angeles.

## Regional Officials

R. O. Crowe, former vice president of the Los Angeles Railway Corp., has been named regional director for Region Five of the Office of Defense Transportation.



William H. Helvey, former regional chief of the loans and collection section of the Farm Security Administration, will act

as regional administrative officer in San Francisco to aid in expediting ODT operations in Region Ten.

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• The cast iron pipe shown below was laid at Portland, Ore., in 1886. After 55 years' service it was in such good condition when dug up, it was used again.



# WAR BOND PAYROLL SAVINGS ROLL OF HONOR

Plan Who Can Read at Work Employees Whose Names Are Listed at Least 10 Percent of the Gross Payroll in War Savings Bonds Through the Payroll Savings Plan

The eyes of all America are upon the United States Treasury Roll of Honor appearing in the "Payroll Savings News." For copy write War Savings Staff, Treasury Department, Washington, D. C.

NEW 10% WAR BOND DRIVES  
SWELL TREASURY HONOR ROLL

## HOW TO "TOP THAT 10% BY NEW YEAR'S"

Out of the 13 labor-management conferences sponsored by the National Committee for Payroll Savings and conducted by the Treasury Department throughout the Nation has come this formula for reaching the 10% of gross payroll War Bond objective:

1. **Decide to get 10%.**  
It has been the Treasury experience wherever management and labor have gotten together and decided the job could be done, the job was done.
2. **Get a committee of labor and management to work out details for solicitation.**
  - a. They, in turn, will appoint captain-leaders or chairmen who will be responsible for actual solicitation of no more than 10 workers.
  - b. A card should be prepared for each and every worker with his name on it.
  - c. An estimate should be made of the possible amount each worker can set aside so that an "over-all" of 10% is achieved. Some may not be able to set aside 10%, others can save more.
3. **Set aside a date to start the drive.**
4. **There should be little or no time between the announcement of the drive and the drive itself.**  
The drive should last not over 1 week.
5. The opening of the drive may be through a talk, a rally, or just a plain announcement in each department.
6. Schedule competition between departments; show progress charts daily.
7. Set as a goal the Treasury flag with a "T."

AS of today, more than 20,000 firms of all sizes have reached the "Honor Roll" goal of at least 10% of the gross payroll in War Bonds. This is a glorious testimony to the voluntary American way of facing emergencies.

But there is still more to be done. By January 1st, 1943, the Treasury hopes to raise participation from the present total of around 20,000,000 employees investing an average of 8% of earnings to over 30,000,000 investing an average of at least 10% of earnings in War Bonds.

You are urged to set your own sights accordingly and to do all in your power to start the new year on the Roll of Honor, to give War Bonds for bonuses, and to purchase up to the limit, both personally and as a company, of Series F and G Bonds. (Remember that the new limitation of purchases of F and G Bonds in any one calendar year has been increased from \$50,000 to \$100,000.)

**TIME IS SHORT.** Our country is counting on you to—

## "TOP THAT 10% BY NEW YEAR'S"



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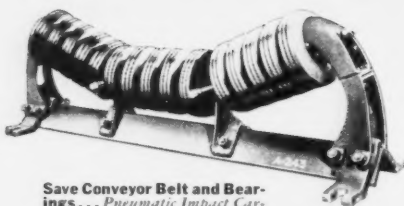
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55'  
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1400'  
GRAVITY TAKE-UP  
EL. 1820'  
HEAD PULLEY  
187'  
TIPPLE



Save Conveyor Belt and Bearings... Pneumatic Impact Carriers take the loading shocks of mine-run coal light and heavy, large and small as it comes.

This S-A Belt Conveyor has brought nearly 7,000,000 tons of mine-run coal down the hill to the tippie at the Mayflower Mine, Bonny Blue, Virginia.

Costs figured over 11 years prove the outstanding economy of moving tonnage by this method with low-maintenance S-A equipment.

Catalog No. 47, describes S-A Belt Conveyors and accessories.

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